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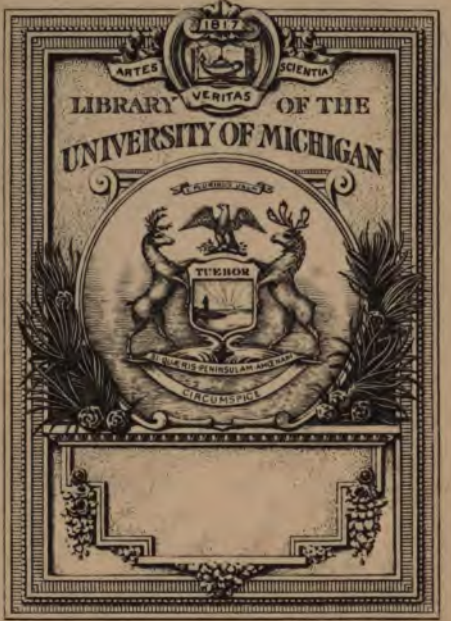
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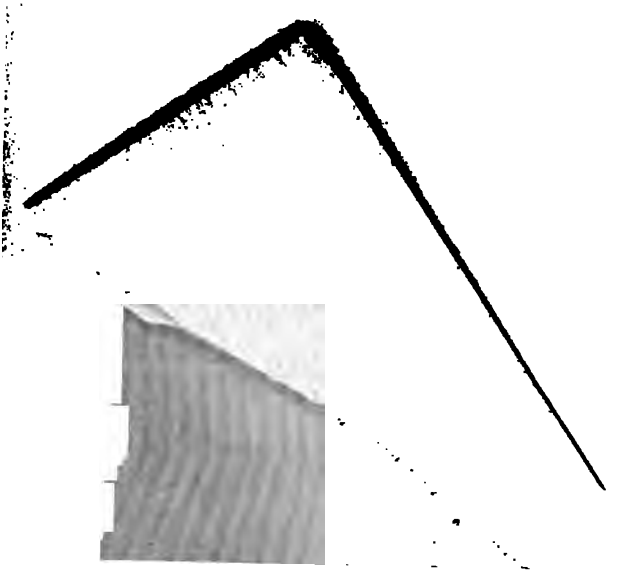
NANSEN AND THE FROZEN NORTH

"Staunch and strong, a goodly vessel,
That can laugh at all disaster,
And with wave and whirlwind wrestle."

Longfellow.



VISITORS TO THE FRAM BEFORE STARTING.

NANSEN

AND THE

FROZEN NORTH

WITH

REMINISCENCES OF ARCTIC EXPLORATION

BY

JOHN BLACK

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PREFACE.

As it cannot fail to be a pleasure and a gratification to become better acquainted with a man so gifted and honoured as the great explorer, slight excuse need be made for introducing this little work to public attention. The side lights of Northern travel, the aims and aspirations of adventurous voyagers which led to the crowning achievement of later days have been focussed in the few pages of the book, for which we ask the readers' kind indulgence. So large an enterprise might well demand a large and extensive book. This, however, has been given to the world by Dr. Nansen himself, and none could be, by nature, and experience, better qualified to speak on the engrossing topic. To Britons, a nation of adventurers, his deeds especially appeal. In two directions only has nature seemed determined to baffle human curiosity in geographical science, the frozen North an impenetrable barrier of ice, and the equally silent and mysterious *impasse* of the Antarctic seas. It seems strange that so many attempts should be made to discover the secrets of that world in the North as well as in the South, which lay behind the mysterious veil of ice and snow. The reason given by the learned Doctor is that humanity wants to know everything about the globe on which it is living. It is with humanity as it is with a man who has got a new house; he wants to

know every room in the house in which he is going to live, and if there should be a few rooms which he was not allowed to see, it would be his special desire to see those rooms. The regions or rooms of the world which it seems as if the present generation are not destined to see, are the two to which we have alluded laying around the South and North Poles. In many and various ways has humanity tried to penetrate the interior of those regions, especially those of the North Pole. It has remained, however, for Dr. Nansen to penetrate the regions farthest north, and to describe unique experiences of a time when the long Polar day waned and the long Polar night began, a time of beauty. The marvellous Arctic sunsets are followed by wonderful moonlit nights, with their many beautiful phenomena and even more wonderful than the moonlight effects are the northern lights. In less Northerly latitudes, it is not easy to form a clear idea of what those lights are in the Polar regions where they flash and scintillate over the whole sky, day and night, as long as the winter night lasts. To be alone with nature amid such surroundings must dispose the mind to contemplation of the possibilities of finding out yet more of her hidden secrets. It is therefore not surprising that our latest hero of the North is already contemplating a conquest of the South. Whatever his future achievements, however, his fame will rest upon the long Northward journey of his good ship the *Fram*, and Nansen will be a name for ever indissolubly associated with the Frozen North.

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CHAPTER I.

THE REALM OF THE ICE-KING.

THE geographical knowledge of the early civilised nations was very limited. The Egyptians, Chaldeans, Hebrews, Assyrians, Greeks, etc., knew little of other lands outside their own borders. It is true that almost certainly the Phœnicians, and very probably the Egyptians, ventured between the Pillars of Hercules (Straits of Gibraltar), and circumnavigated the African continent; but, being ignorant of the true shape of the earth, the knowledge gained by such voyages was not fruitful. It was not, indeed, until the spheroidal form of the earth and the inclination of its axis were realised that the first rudimentary principles of either mathematical or physical geography could be apprehended.

Voyagers from the north temperate zone of course knew that as they sailed southward they came into a warmer climate, whilst navigating in a due

northerly course brought them to a continually lessening temperature; but it was a long time before the existence of what we now term the "Arctic" or "Polar Regions" was realised.

Geology apprises us that there was a time in the history of our globe (the tertiary period) when a sub-tropical, or at least remarkably warm climate existed over all the earth's surface, including the Polar regions. The same science also shows us that this genial state of things was succeeded over all the earth by a period of intense and rigorous cold (a "Glacial Epoch"). Why these extreme results should in either case have been so general, geology does not inform us. But, although it is so, our present-day science does account for the perpetual ice which chains the waters and hardens the earth within the Arctic and Antartcic circles. Here, in frigid zones, not only do the rays of the sun fall too obliquely to heat the atmosphere effectually; but each of the frigid zones in turn (at the period of the solstices) is left uncheered altogether by the rays of the sun for a time, while, in compensation, during the short Arctic (and Antarctic) summer the orb of day never sinks below the horizon.

We have then, extending from either pole to the Arctic and Antarctic circles respectively ($23\frac{1}{2}°$ N. and $23\frac{1}{2}°$ S.), a region of perpetual ice. Formerly, even

after this fact had been realised, it was not accurately known how far this ice was underlaid by earth or water. Even so recently as the beginning of the current century the maps of the day represented the North Polar regions as an absolute *terra incognita. Nous avons changé tout cela;* and the researches of the intrepid and hardy explorers of the nineteenth century have enabled that portion of the earth's surface to be mapped out with at least approximate accuracy, as we shall see farther on. Much of the superficies of the Polar regions consisted of frozen ocean, interspersed however with large scantlings of the Northern portion of the Old and New Worlds, and numerous islands. Amongst the former are the extreme north of Norway, part of the land occupied by the Samoyeds, part of Siberia, Alaska, and Baffin's Land, while amongst the islands are Greenland (Iceland is just outside the Arctic circle), Spitzbergen, Nova Zembla, Boothia, Victoria Land, Bank's Land, the recently discovered New Siberia Island, and many smaller islands.

The land and sea within the Arctic circle have only two seasons—one, a long winter of extreme cold, and the other a brief summer of great heat. The entire zone is covered with ice and snow during the former, and to the varieties of the former geographers have applied distinctive appellations.

Thus "icebergs" (from the Norwegian "ice mountain") are great masses of the Polar ice-fields or glaciers which have protruded themselves into the ocean during the short summer, and, having been broken off from the main mass, have floated away. Such icebergs range in height from 40 feet to more than 250 feet above the surface of the ocean, and are often several miles in circumference. It is calculated that their depth below the surface is at least eight times more than their altitude. "They present," says an observer, "the appearance of dazzling white chalk cliffs of the most fantastic shapes, and are always grand and awful. Laden with stones and *débris*, they are transported by winds and currents into warmer latitudes, where they melt away—bergs from the Arctic Ocean being met with in the Atlantic as far south as the Cape of Good Hope. They spread a sensible degree of cold around them, accompanied by fogs, and are very dangerous to navigation. The smaller and less lofty masses are named "ice-floes" (or ice-islands) and drift upon the surface.

The atmospheric conditions of the Polar regions differ considerably from those of other parts of the globe.

One cause of this is undoubtedly the fact that not only do the Arctic regions embrace the site of one end of the earth's axis, but also one extremity of the

magnetic axis, viz., the North Magnetic Pole. And thereby this region of "thick-ribbed ice," so long a realm of mystery, was linked to the voyagers on every ocean of the Northern hemisphere by the use of the "Mariner's compass." This little friend and guide of the navigator was known to the Chinese 2,000 years before the dawn of science, and was first employed by them as a guide across the trackless deserts of North-Eastern Asia, while for at least 600 years it has been in regular use by European mariners as their director in their voyages. But none of these, either Europeans or Asiatics, had even the slightest idea as to what influenced the floating needle to cause it to lie due North and South on the surface of the water. Guiot the Provençal wrote 600 years back, that the lode-stone needle pointed to the "star" (*i.e.*, the North Star, or Polaris), whence Shakespeare uses the term "lode-star" as an equivalent for an attractive power.

Dr. Gilbert, of Colchester, physician in ordinary to Queen Elizabeth, discovered the true explanation of the wonderful directional tendency manifested by magnetised needles. His explanation is, that the earth, not the pole-star or any other "lode-star," but the earth, acts upon a movable needle, as does a lump of loadstone or a bar magnet held anywhere in its neighbourhood.

The Mariner's compass of the day consisted (as we see by the frontispiece of the second edition of Dr. Gilbert's book on the Magnet, published 1628), of a lodestone floated on a basin of water, obviously a very inconvenient arrangement. Yet even with this disadvantageous style of mounting, Robert Norman, a sailor and nautical instrument maker, had discovered the "dip" of the magnet a quarter of a century before the appearance of the first edition of Dr. Gilbert's book in 1600.

By the "dip" is meant the tendency which the pole of the magnet which points north has (in Northern hemispheres) to point also downward if it is mounted so that it can revolve vertically. This depression of the needle increases as the vessel carrying it goes farther north, and both scientists and geographers came to the conclusion that a needle thus mounted would indicate the true magnetic pole with absolute precision, which of course the ordinary horizontally revolving needle could not do.

The *aurora borealis* connects itself naturally with magnetic science.

We extract from the Treatise on Meteorology, by Messrs. Becquerel, the following description of an *aurora borealis*, as observed at Bossekop, in Norwegian Lapland, at 70 degrees north latitude, in the winter of 1838–9.

In the evening, between four and eight o'clock, the fog, which usually prevails north of Bossekop, becomes coloured in the upper part. This light gradually gets more regular, and forms a sort of arch of a pale yellow colour, with its concave side towards the earth, and its highest point apparently in the magnetic meridian.

Before long, blackish stripes in regular order separate the luminous parts of the arch. Luminous rays are formed, which lengthen or become shorter, slower or instantaneously, their brightness increasing and diminishing suddenly. The lower ends of these rays always exhibit the brightest light, and form an arch of more or less regularity. The length of the rays is very varied, but all converge towards one point in the sky, which is indicated by the prolongation of the southern extremity of the inclination needle. Sometimes the rays are prolonged till they meet, and thus form the fragment of a luminous cupola.

The arch continues to ascend towards the zenith, exhibiting an undulating motion in its light. Sometimes one of its feet, or even both, are separated from the horizon. The folds are then more distinct and more numerous. The arch is nothing more than a long band or strip of rays, which are twisted and separated in several parts, forming graceful curves,

which wind about and present the appearance known by the name of the *corona borealis*, or northern wreath. The brightness of the rays, varying suddenly in intensity, reaches that of stars of the first magnitude, the rays dart with rapidity, and the curves form and unfold like the coils of a serpent. Then the rays become coloured; the lower part is red, the middle green, and the remainder of a clear yellow tint. At last the brightness diminishes, the colours disappear, and the whole becomes gradually indistinct or suddenly vanishes. Scientific observers have noted 150 appearances of the *aurora borealis* in the course of 200 days in the northern regions; but it appears that at the poles nights without any aurora are altogether exceptions, so that we may infer their existence every night, though occasionally too faint to be clearly distinguished. Sometimes the same aurora has been seen at the same time at Moscow, Rome, and Cadiz.

Many hypotheses have been started as to the cause of this phenomenon. The invariable direction of their arches in relation to the magnetic meridian, and the perturbations which they produce in the mariner's compass, show that they must be attributed to electric currents proceeding from the poles towards the upper regions of the atmosphere, but the origin of this electricity is entirely unknown.

The *flora* and *fauna* of the Arctic regions are both, as may be imagined, very limited. Indeed, the former may be dismissed without comment, but the latter include, besides fishes, the great white Polar bear, the reindeer, the walrus, bottle-nose and other seals and whales.

The Polar bear is tolerably plentiful in the Arctic regions, as may be judged from the fact that Dr. Nansen's harpooner, during his crossing of Greenland, claimed to have brought down no less than eighty with his rifle. The bear preys upon the seals and commits great devastation among them. The Eskimos occasionally venture to encounter him with their lances and arrows, but infrequently. Seeman, in his "Voyage of the *Herald*," tells us that he was witness of a cunning and ingenious expedient adopted by these natives to bring the bear into their power. They took a stout and elastic strip of whalebone, about two feet long by four inches broad, rolled it up in a spiral of small compass, and enveloped it in a mass of blubber which presently froze hard and solid. Provided with this bait, when they saw a bear at some distance, they discharged arrows at the animal so as to irritate him into pursuing them. The blubber-enclosed whalebone was then thrown down in his path. Bruin did not neglect the savoury morsel, but snatching it up and "bolting" it en

passant, continued the pursuit. Poor brute! The warmth of his stomach soon thawed the frozen blubber, and the whalebone infernal machine, uncoiling with force, so wounded the sensitive coats of the stomach that, puzzled and maddened with the mysterious internal agony, the bear wallowed in the snow in torture, and thus fell an easy prey to the spears of the Eskimos.

The reindeer is tolerably abundant, and is not only hunted by the Eskimos, but is sometimes domesticated and employed in place of dogs to draw their sledges, being much swifter.

The Arctic dog, used for hunting and sledge work, is a species of animal *sui generis*. He is so much like the Polar wolf, but for one notable trait, that the inexperienced explorer finds it hard to distinguish between them. The great difference is that while the wolf when running carries his head low and his tail between his legs, the dog carries his well curled over his back. He does not, however, bark like dogs of civilised lands, but only emits a wolf-like growl.

Many explorers have found these animals of great use in dragging their sledges. But, useful as they are, they often cause a good deal of trouble from their unmanageableness in two respects. The first of these is their incurable pugnacity. They are

ferocious fighters amongst themselves, and fight they will. The other difficulty arises from their detestation of water, at least in its liquid condition. On the ice they are all right, but should they come upon a "lead," or little trickling rivulet of water amidst the snow and ice, they "jib" at it, and have to be forcibly dragged through or over it by ropes.

Walruses are tolerably plentiful, and these are eagerly hunted by the natives with lance and harpoon by the aid of their dogs. In the spring the hunting is comparatively easy, but later it becomes fearfully hazardous.

Seals are numerous, and numerous vessels—English, American, and of other nations—known as "sealers"—regularly visit the Arctic regions in pursuit of them. Dr. Nansen's first experience of Greenland was gained on board a "sealer."

Both the whale and the narwhale are hunted by the Eskimos and other inhabitants of the Northern regions with harpoons, in their *kayaks*, or light, long canoes. They attach a line of thong to the shaft of the harpoon with an inflated bladder tied to the other end of the line, so as to be able to pursue their prey. The economic uses of the whale to the Eskimos are numerous and of the highest importance. His blubber forms a favourite article of

diet. The train-oil obtained serves as fuel for the lamps, which are kept burning day and night in the Eskimo *Igloos*, or hut. The ivory forms a material for the carving work with which the native whiles away the long dark hours of the Arctic winter.

DR. NANSEN READY TO START FOR A DRIVE WITH DOG AND SKI.

CHAPTER II.

THE SUBJECTS OF THE ICE-KING.

It is a fact which has so often been dwelt upon that it has become a veritable truism, that man has been so physically constituted as to render him the most acclimatizable member of the whole animal kingdom. Hence he can with more or less ease accommodate himself to the equable climate of the temperate zones, the fervid heat of tropical lands, or the Arctic rigours within the Polar circle.

Several more or less well-defined types of mankind are found in the Polar regions, as the Eskimos, the Lapps, or Laplanders, the Greenlanders, the Samoyeds, the Ostjaks, the Jakuts, and the Alaskans. To these may be fittingly added the Icelanders and Finns, although the regions inhabited by these are just outside the Polar circle.

Of the tribes we have named, the Eskimos have the widest range, and are the only ones we need notice.

The Eskimo race has an exceedingly wide distribu-

tion, and they are probably spread over a greater area of the earth's surface than any other breed of men, unless, perchance, it be the Anglo-Saxon. The Eskimos extend from Greenland and Labrador over all the coasts in the Arctic circle to the extreme North-East of Asia, and skirt the north of the New World. Thus they wander over territory nominally belonging to various nationalities—as the British, Danish, American, and Russian. The whaler meets them in the North Latitude as high as 80°, and the explorer even farther North.

Ethnologists have naturally felt great interest in a people so *unique* in many respects as the Eskimos; but their researches and speculations have been fruitful of but little definite result. At one time there was some idea that they might be a deteriorated offshoot of the great Red race of the New World; but more modern anthropologists have decided with tolerable unanimity that the Eskimos must be descended from a Mongol or Tartar stock, a conclusion certainly justified by their facial aspect and other traits.

These people have been known by different designations at various periods. The early Scandinavian Greenlanders dubbed them "*skraelingers*" (*i.e.*, "screamers" or "outcasts"). The seamen of the Hudson Bay ships, who traded commonly with the

inhabitants of Northern Labrador, have long called this race "Seymos" or "Sackamos." These appellations are evidently formed from the cry of "Seymo" or "Teymo," with which the Eskimos greet a ship. Doubtless it was this native cry which the French transliterated in the plural noun "Esquimaux," a word which we and other nations adopted and employed in the French form. At the present day the Americans and ourselves use it still, and spell it phonetically as "Eskimo" (*pl.* Eskimos). It may be remarked that the Eskimos call themselves "Inuit," which simply means "men," perhaps with some shadowy parallel idea to that of the Elizabethan dramatist who wrote :—

> Man is a name of honour to a king;
> Addition takes away from each chief thing.

In spite of the varied forms of civilization and diverse types of nationality with which the Eskimos have come in contact for centuries, they retain a persistent and clearly-marked type. The Eskimo has a broad face, with its greatest width just below the eyes; the forehead is generally narrow and tapering upwards; the eyes small and placed somewhat obliquely, strongly recalling a distinctive Mongol or Tartar characteristic. The complexion of the Eskimo is dark, but it is altogether of a different hue to the

skin of the Red Indian, and derives its tint rather from the effect of grime and dirt than from the bronze of nature. It is easy to understand that in a climate so rigorous as that within the Polar circle, the natives do not greatly affect washing themselves, and of course soap is an unknown substance. At least one voyager has opined that if a young squaw could be persuaded to give her face a good wash she would present a by no means unattractive countenance, and would be found lighter in complexion than any one people outside the white race proper.

The male Eskimos are generally of fairly good stature, very broad-shouldered, and tolerably muscular. Simpson tells us that he saw at Camden Bay three Eskimos who measured from 5 ft. 10 in. in height to 6 ft., and Kane met one a foot taller than himself. The women are, however, short. Both sexes have remarkably small and well-shaped hands and feet. The women plait their glossy black hair with considerable taste and skill.

Like the Indians, the younger Eskimos often kill the old. Often the old are tired of life and beg to be dispatched. If food is scarce they are turned out to starve, whether they like it or not. The superfluous women are also disposed of in this way. Barbarism shows itself in their treatment of the dead. The body of a favourite wife or child is sometimes pro-

tected through the winter and decently buried in the spring, but as a general rule corpses are dragged a short distance from the village and abandoned to the dogs.

The savages have no idea of the marriage relation. Women are treated as chattels. The number of wives a man may have is regulated not by his possessions, as among the Mormons, but by his ability to manage women. It may be inferred from this that polygamy is not carried on to any great extent.

The Eskimos attire themselves in skin garments, very well made, and affording good protection against the intense cold to which they are constantly exposed. Their women are extraordinarily expert in making the "kamleikas," or waterproof shirts, fabricated of the intestines of the seal or walrus, and used as summer wear. They are also very skilful in making boots adapted to their peculiar environment, sewing the seams so well and finely as to render them practically waterproof.

The natives construct their cabins very ingeniously of different materials, as snow, stone, earth, and drift-wood.

As soon as the seal-hunting begins with the long summer days, the Eskimo hunters erect cabins for themselves in the vicinity of their proposed field of

operation. Almost certainly here of building materials, in our sense, there will be an utter lack. But this paucity of materials such as are found—as stone, wood, or brick-earth—in more favoured latitudes, does not dishearten our Eskimo hunter, who knows the structural capabilities of the omnipresent frozen snow which environs him.

So he first marks out a circle on the snow as a ground plan for his edifice. Next he excavates the frozen snow within this ring until he gets down to veritable ice, which will form his floor. The snow dug out, he fashions into building blocks of about four inches thick, and of shape and size to be easily handled. With these he begins to build his wall, observing the circular outline he has marked and dug out. The unlimited supply of frozen snow lies all around from which to fashion more building blocks, and very soon he has a little hut run up of about the shape of a straw beehive, but flatter, which will serve him for "kitchen, parlour, and all," while he elects to remain in that locality. If the blocks are not quite wind-and-weather tight, the builder throws some loose snow into the "joints," which freezes at once and makes all "taut."

As a rule the Eskimo does not trouble about a window, for sufficient light penetrates through the thin frozen snow walls for his and his wife's pur-

poses, but if he wants one, a plate of thin ice readily supplies it. Neither does he construct a chimney, or even make a hole in the convex roof for the exit of smoke, and for a good reason. Smoke there is not an excess of, for the hunter has no fire. Fire he cannot have, for there is no fuel. He doesn't want to cook, for he prefers raw meat, when he can get meat at all. A train-oil lamp gives sufficient light for his squaw to sew up garments or boots, or for himself to carve a bit of fossil or walrus ivory by, and also yields sufficient caloric to dry the skin garments and boots saturated with ice-cold water while hunting.

The natives will raise these primitive examples of Arctic architecture with astonishing celerity. When McClintock, for the remuneration of a few nails, hired four Eskimos to build a hut for his party, they completed it in an hour, though it was eight feet in diameter and five and a half feet high.

The "furniture," if we can term it so, of an Eskimo snow "*igloos*" (hut) like this, such as couch, seat, &c., are also formed of hardened snow, with skins laid on them.

The Eskimos are very ingenious in other matters besides building an "*igloos*." They construct their "*kayaks*" (canoes) very skilfully. They fabricate heads for their harpoons, spears, and arrows of bone, and render them very keen and effective. Their

stout bows will impel peculiarly long arrows with great force, and they make a very ingenious missile for capturing sea-birds, &c., on the wing, which somewhat recalls the Peruvian *bolas*, and is as *sui generis* as the Antipodean "boomerang." This apparatus consists of six or eight small balls of walrus tooth ivory, each with a hole drilled through it and threaded on sinew or strips of hide. The other ends of these strips are tied together. When this missile is forcibly thrown at a flock of flying birds it forms a rotating star, and any bird falling within its sphere is helplessly enmeshed as by the arms of a rotating aërial octopus. The men also do some very creditable carving in fossil, or walrus, or narwhale ivory, during the long dark winter days.

Between the Northern Red Indian and the Eskimos there is a chronic and inextinguishable hatred. Of this Hearne, in his "Voyage to the Coppermine River," adduces a strong and striking instance. The Red men with whom Hearne was travelling got intelligence of an Eskimo encampment in their neighbourhood, and at once resolved, despite the entreaties of the white man, to destroy them. Accordingly they stole on the unsuspecting *Inuits* by night and annihilated them, massacring men, women and children, without respect of age or sex. That part of the river acquired in consequence the name of the

"Bloody Falls," and skulls of the victims were still found in 1821, long after the date of the tragedy. On the other hand, the Eskimos shoot down any stray Indian they may meet with their arrows without scruple.

"Year after year," observes Sir John Richardson, "the Eskimos on the Polar coast of America are occupied in a uniform circle of pursuits. When the rivers open in spring, they proceed to the rapids and fall to spearing the salmon, which at this season come swimming stream upwards. At the same time, or earlier in the more southern localities, they hunt the reindeer, who drop their young on the coast and island when the snow is only partially melted. Where the open country affords no opportunity of approaching the game unperceived, deep pits are dug in the snow, and superficially covered with snow tablets. The wind soon effaces the traces of the human hand, and the wary reindeer are snared."

CHAPTER III.

ARCTIC EXPLORATION AND THE NORTH-WEST AND NORTH-EAST PASSAGES.

We have spoken in our first chapter of the ignorance of the earlier ages concerning the regions of the extreme North. Very slowly indeed was that ignorance enlightened.

All the classical nations knew of the regions of the extreme North of Europe was an uncredited rumour about an island named Thule, situated amongst the ice and snows within the Arctic circle. This was probably Iceland, unto which some Phœnician ship, striving to reach the Baltic coast in pursuit of amber for some Eastern potentate, may have been driven by stress of weather or by trend of current. This vague report is credited to a certain Pytheas.

We reach, however, probably firmer ground in the tradition that in the ninth century some Irish monks paid a visit to Iceland. The Monk Dicuil, *circa* 825, asserts that he had conversed with monastic brethren who had been to Thule and stayed there for several months. The fact that they asserted that

there was no darkness there at the summer solstice appears to guarantee the *bonâ fides* of this statement, since the monks could hardly have excogitated this physical phenomenon of high latitudes out of their "inner consciousness."

Our Saxon King Alfred (A.D. 871–901), in his paraphrase of Orosius, inserted an account of the voyage of Othere and Wulfstan, told to the king by Othere himself, from which it would appear that the twain actually sailed round the North Cape to Lapland.

It appears indubitable that the Norsemen, of the Scandinavian peninsula, after colonising Iceland, were the first to form settlements of a permanent nature in Greenland. This is certain from extant remains. A Scandinavian stone sculptured with a Runic inscription was discovered in a cairn in lat. 73° N., and the inscription shows that it was placed there 1235. Professor Hornemann, who visited Greenland in 1833-34, in a report made to the Copenhagen Society of Arts and Science, said that in accompanying some natives on a reindeer hunt on an elevated plateau inland, near a sea of ice they showed him some stone cabins, which they asserted had been built by the ancient Norsemen, and were very useful to them on their hunting excursions. It is considered, on probable grounds, that the Norsemen extended their expeditions beyond the Arctic

circle along the western coast of the ice-bound, glacier-sheathed Greenland. The sites of their colonies at Brattelid and Einarsfjord, however, did not reach a higher latitude than 65°, although from thence their summer voyages extended far within the Arctic circle. One of their expeditions is believed, on good grounds, to have reached a latitude of 75° 46″ N. in Barrow's Strait, *circa* 1266. Many believe, and by no means without reason for "the faith that is in them," that some of the brave Iceland or Greenland Norsemen crossed over to America and discovered (and to a trifling degree, settled) the New World centuries before Columbus. This was not, of course, Arctic exploration, but it is good evidence of the intrepidity, not to say temerity, of these daring Scandinavian mariners.

The intercourse between Norway and her Greenland colony was, however, abruptly ruptured about the middle of the fourteenth century; when that terrible epidemic, the Black Death, worked such fearful ravages in the former country as to utterly prostrate enterprise, and almost cause stagnation even of the most ordinary and indispensable duties of every-day life.

There is extant a document of about this date by Toar Bardsen, a native Greenlander, and steward to *the* Bishopric of Gardar, which contains correct

sailing directions for a ship's course from Iceland to Greenland, and may be fairly reckoned the very earliest work on Arctic geography. Indeed, it still has interest and value.

The next explorer of the North appears to have been the celebrated Sebastian Cabot, a name well-known in geographical annals. He was a Venetian mariner, who commanded a small exploring fleet fitted out by our Henry VII., which sailed 1496, the year after Christopher Columbus returned to Europe, after his discovery of the New World. The results of Cabot's voyage were the discovery of Newfoundland and Labrador and other regions, of which probably Columbus had never dreamed. Three years after Cabot's voyage Gasper Cortereal and his brothers made three separate voyages in the same direction, sailing northward by Labrador, until they were arrested by the ice in 60° N. lat.

Next came the English expedition promoted by Cabot, and commanded by Sir Hugh Willoughby and Richard Chancellor, who sailed May 20, 1553, with the ostensible object "for the search and discovery of the North part of the world, to open a way and passage to our men, to travel to new and unknown kingdoms." Willoughby sighted Nova Zembla, but he and his men perished of cold and starvation on the Lapland coast. Chancellor, more fortunate,

landed near Archangel, journeyed to Moscow, and initiated trade *rapprochements* with the Czar of Muscovy (Russia). His success in this matter proved at least the utility of Polar explorations, and led to the incorporation, under Royal Charter, of the Association of Merchant Adventurers, of which Cabot was made Governor.

Other Englishmen followed, as Burroughs (1556), Martin Frobisher (1576), and Arthur Pet and Charles Jackman (1580). Frobisher brought back with him a specimen of glittering mica-schist rock, which in the then primitive condition of scientific metallurgy, he and others mistook for a gold-bearing mineral.

Frobisher's voyage was undertaken for the discovery of the North-Western Passage to India, and in this connection it has been remarked that "The original motive of the English was at least to discover a route to the wealthy countries of Western Asia, and to share in the traffic monopolised by Spain and Portugal when in the height of their power. Thus arose a double series of attempts, either to coast eastward along the north of Europe and Asia, or to sail westward across the Atlantic, the latter being afterwards modified into attempting to coast westward along the north of America. Thence arose the terms "North-East Passage" and "North-West Passage."

Of course, it is not to be imagined that during the period of which we have been speaking, the English were the only Polar explorers. On the contrary, many other nations tried their skill and courage in high latitudes. The oldest map in existence of these regions was published by a Venetian nobleman during the sixteenth century, with the assertion that it was founded on the researches of one of his sea-going ancestors. Some of the sites in this map are believed to have been identified. Others can be made nothing of, so that altogether a pleasing halo of mystery hangs about this possibly real, possibly mythical, old Venetian navigator. The Dutch, the Russians, and the Danes and other Northern people all did a little in Arctic exploration, while, as was perhaps natural, the Latin races of the South of Europe did not stir at all in the matter.

Returning to our English Northern voyages, we have Frobisher's third expedition in 1578. Closely following (1585), that thorough navigator and intrepid seaman, John Davis, sailed from Dartmouth, and made two subsequent voyages. Some time after his return from the last (1595) he published an *opuscule* containing arguments in favour of the existence of a North-West Passage, and declared, as the results of his voyages, that there was "no ice towards the North; but a great sea, free, large, very

salt, and blue, and of an unsearchable depth." The Molyneux globe in the library of the Middle Temple records Davis's discoveries.

At the commencement of the seventeenth century the Muscovy Company employed that daring mariner Henry Hudson in Polar explorations. He attempted the North-West Passage, and discovered, in 1610, the straits and extensive bay which have handed down his name to fame and to posterity.

Sir Thomas Button (1612), and also Robert Bylot and Baffin (1615), continued the noble record. Baffin discovered the great channel extending north from Davis Straits which bears his name. He also recorded some magnetic observations which more recent scientists have found useful.

The expedition, fitted out by Amsterdam, which sailed in 1594, deserves note, as it consisted only of one vessel of 100 tons burden, and was commanded by William Barents, whose name is familiar to us from the Dutch expedition of 1878, when the explorer's ship bore the name of the earlier navigator. Barents made two subsequent voyages. In the last he and his crew wintered in Ice Haven, and Barents died on the homeward voyage. He is noticeable as being the first captain who wintered in the Arctic regions.

The next notable name in our story is that of

Henry Hudson. This dauntless mariner left Gravesend May 1, 1607, in a tiny craft called the *Hopewell*, his crew consisting of ten men and a boy only; on so small scales were the early exploring expeditions sometimes organised. Hudson's sailing orders directed him to reach India by sailing across the North Pole, and these Hudson fully intended to carry out. Reaching Greenland, he skirted the eastern coast of that then mysterious continent, being but little impeded by ice. On attaining 70° N. lat., Hudson named the land he then sighted "Hold with Hope," in token of his own confident expectations. Hereabouts, however, he was baffled by the ice, and, steering north-easterly, reached Spitzbergen, where he sighted its north-west point and named it Hakluyt Headland, the name it still bears on our maps. The highest latitude attained by Hudson was about 80° 30′ N., when, finding it impossible to penetrate the ice, he returned to England, "after a voyage which, for fearlessness and audacity," observes Captain Albert Markham, "has no equal on record." In his small and badly-found craft the bold navigator had attained the highest northern latitude hitherto reached, and the east coast of Greenland, first skirted by him, was not again visited until two hundred years later, when it was re-discovered by Captain Scoresby.

Three years later the Muscovy Company dispatched Captain Jonas Poole to Spitzbergen, with instructions to search for "the likelihood of a trade or passage that way." He sailed in the *Amitié*, seventy tons burden, with a crew of fourteen all told. Adverse ice and bad weather hindered him, however, from any notable achievements.

In the year 1773 the English Government dispatched two bomb-vessels, *Racehorse* and *Carcass*, under Capt. Hon. Constantine Phipps (afterwards Lord Mulgrave) and Commander Lutwidge. Under the latter, in the *Carcass*, Horatio Nelson served as a midshipman. This expedition reached 80° 48′ N. lat. and 15° E. long., when the solid ice-pack prevented further progress, and after a space of imprisonment in the ice the expedition returned to England.

The next notable expedition was that of the *Dorothea*, Capt. David Buchan, and the *Trent*, Lieut. John Franklin. This sailed April 25, 1818, and soon after crossing the Arctic circle the vessels became separated through stress of weather. Some idea of the state of things to which they were exposed may be gained from the following extract from the narrative of the expedition, published twenty-five years later by Capt. Beechey (first lieutenant of the *Trent*):—"The weather was now very severe; the snow fell in heavy showers, and several tons' weight

of ice accumulated about the sides of the brig, and formed a complete casing to the planks, which received an additional layer at each plunge of the vessel. So great indeed was the accumulation about the bows, that we were obliged to cut it away repeatedly with axes, to relieve the bowsprit from the enormous weight that was attached to it; and the ropes were so thickly covered with ice, that it was necessary to beat them with large sticks to keep them in a state of readiness for any evolution that might be rendered necessary either by the appearance of ice to leeward, or by a change of wind."

After being imprisoned for some time in Magdalena Bay, the ships again put to sea and reached 80° 15′ N. Again, however, the ice hemmed them in, and to give some idea of the perils occasioned by the ice-pack, we will quote again from Beechey:—

"On the evening of the 10th '[July]' the *Trent* sustained a squeeze which made her rise four feet, and heel over five strakes; and on the 15th and 16th both vessels suffered damage, especially the *Dorothea*, from her being larger and more wall-sided than the *Trent*. On this occasion we observed a field fifteen feet in thickness break up, and the pieces pile upon each other to a great height until they upset, when they rolled over with a tremendous crash. The ice near the ships was piled up above their bulwarks, to

the great danger of the bowsprit and upper works: fortunately the vessels rose to the pressure, or they must have had their sides forced in; the *Trent* received her greatest damage upon the quarter, and was so twisted that the doors of all the cabins flew open, and the panels of some started in the frames, while her false stern-post moved three inches, and her timbers cracked to a most serious extent. The *Dorothea* suffered still more: some of her beams were sprung, and two planks on the lower deck were split fore and aft, and doubled up, and she otherwise sustained serious injury to her hull. It was in vain that we attempted any relief, our puny efforts were not even felt, though continued for eight hours with unabated zeal; and it was not until the tide changed that the smallest effect was produced. When, however, that occurred, the vessels arighted and settled in the water to their proper draft."

Desiring, if possible, to skirt the edge of the pack, and protect his vessel, Franklin surrounded the hull with pieces of his largest cable cut up, walrus hides, and iron-plates to act as fenders, and then dashed forward towards the pack, which showed, says Beechey, "one unbroken line of furious breakers, in which immense pieces of ice were heaving and subsiding with the waves, and dashing together with a violence which nothing apparently but a solid body

could withstand." As the brig dashed into that awful seething mass of ice, Captain Beechey tells us that:—

"Each person instinctively secured his own hold, and with his eyes fixed upon the masts, awaited in breathless anxiety the moment of concussion. It soon arrived—the brig cutting her way through the light ice, came in violent contact with the main body. In an instant we all lost our footing, the masts bent with the impetus, and the cracking timbers from below bespoke a pressure which was calculated to awaken our serious apprehensions. The vessel staggered under the shock, and for a moment seemed to recoil; but the next wave curling up under her counter drove her about her own length within the margin of the ice, where she gave one roll, and was immediately thrown broadside to the wind by the succeeding wave, which beat furiously against her stern, and brought her leeside in contact with the main body, leaving her weather side exposed at the same time to a piece of ice about twice her own dimensions. . . .

"Literally tossed from piece to piece, we had nothing left but patiently to abide the issue, for we could scarcely keep our feet, much less render any assistance to the vessel. The motion was so great that the ship's bell, which in the heaviest gale of wind never struck by itself, now tolled so continually

that it was ordered to be muffled, for the purpose of escaping the unpleasant association it was calculated to produce."

Eventually the *Dorothea* and *Trent* became so injured by the ice that the ships had to return to England. So ended the first expedition to the Arctic regions of this century. In it everything was accomplished which human perseverance and pluck and naval skill could do, and it is noticeable as the maiden effort of Franklin as a Polar explorer.

We may here state that in 1745 an Act of Parliament was passed, offering a reward of £20,000 "to such person or persons who shall discover a North-West Passage through Hudson's Strait to the Western and Southern Oceans of America." In the year 1776 a sum of £5,000 was offered by the English Government to the first person who should reach the 89th parallel of latitude. In 1818, when it was decided to dispatch two expeditions, proportionate rewards were offered by Act of Parliament for the different degrees of latitude reached. Thus any vessel that first succeeded in reaching the 83rd parallel would be entitled to a reward of £1,000; double that sum would be granted to any crossing the 85th parallel; £3,000 to any vessel, or person, that should reach 87° N.; £4,000 for the 88th parallel; and £5,000 for the Pole. Five thousand pounds was also

offered to the first ship that should cross the 110th west meridian of longitude north of America, and this latter reward was actually claimed by and paid to Lieuts. Parry and Liddon, who succeeded in crossing the 110th meridian in the discovery ships *Hecla* and *Griper* in 1819.

Subsequent to the Buchan and Franklin expedition there were those of Clavering in 1823, of Graah in 1828; and of De Blosseville in 1833; none of whom, however, reached higher latitudes than their predecessors.

Following up Parry's line of exploration, Ross, in 1829, reached a northern point about a hundred miles from Point Turnagain.

CHAPTER IV.

LATER VOYAGES.

Although, through circumstances over which he had no control, Sir John Franklin had failed to discover the North-West Passage, he was yet firmly convinced of its practicability, and it is, therefore, not surprising that the project did not altogether lapse. Captain Parry, it may be observed, was convinced that the problem should be attacked from the westward, from Behring Strait, instead of by sailing eastward, an opinion which subsequent events have proved to be well-founded. Captain Parry sailed from England on his third expedition in the *Hecla* and *Fury*, May 19, 1824, but in consequence of the early formation of the ice he was able to do nothing. The *Fury* was wrecked, and the *Hecla* had to make her way back to England. Much sympathy was felt for Sir Edward Parry, than whom no more enterprising Arctic explorer had upheld the honour of the English name.

In concluding his own narrative of this voyage Sir Edward wrote, anent the North-West Passage:—

"May it still fall to England's lot to accomplish this undertaking, and may she ever continue to take the lead in enterprises intended to contribute to the advancement of science and to promote, with her own, the welfare of mankind at large. Such enterprises, so disinterested as well as useful in their object, do honour to the country which undertakes them, even when they fail. They cannot but excite the admiration and respect of every liberal and cultivated mind, and the page of future history will undoubtedly record them, as in every way worthy of a powerful, virtuous, and enlightened nation."

Sir Edward Parry made, however, another Arctic voyage, sailing in his old *Hecla* on April 3, 1827, and when Spitzbergen was reached taking to boats, but soon becoming baffled by the impassable ice, he was compelled to return.

In 1829 a small vessel, the *Victory*, fitted out at the expense of Sir Felix Booth, sailed from England under the command of Sir John Ross, for Arctic exploration.

So long as the reward for discovering the North-West Passage continued to be offered, Mr. Felix Booth, the munificent patron of Ross's last expedition, refused to become so, lest he should be charged with interested motives; but an Act having withdrawn that reward, he offered to undertake it, and

pay every expense beyond what the Captain might advance.

The cost of the expedition was £17,000 and upwards to Mr. Booth, and £3,000 to Captain Ross; the latter, his nephew, Commander Ross, and Mr. Thoms the purser, agreeing to serve too without any pay. Captain Ross alleged as the cause of the failure of the preceding attempts that vessels not fit for the service were employed. He made his proposal to Government for the third expedition before seeking means elsewhere, but was answered that they did not intend to pursue the discovery any further. Captain Ross lost his books and instruments on the voyage to the value of nearly £1,000.

With regard to the *Magnetic Pole*, he stated that when near it he was "then in a position where the horizontal compass has no power of traversing to any particular point. When the compass is over the magnetic pole the power of attraction is at right angles with the needle, and the effect of light, heat, &c., will be unrestrained by the magnetic attraction itself; therefore, when the sun passed round, we saw the magnetic needle following its course, thus proving that the sun had an influence, or that light had an influence, upon the magnet, which is a great desideratum in science. The light of a candle has also an effect upon it, and thus it has been ascer-

tained that there exists a connection between light, heat, and magnetism. Even brass affected it, and the buttons of the coat to which the north pole of the needle pointed. We determined the position of the Magnetic Pole by previous observation; and we determined that we were within a very short distance of it. By continuing these observations we arrived at the spot. Before we reached it we were at a variation of 90° westerly; previously to that we had been at 180°. We passed round it; whichever way we passed it, as we passed round it the compass turned towards it horizontally, and when we were to the north or south of it we turned a variation of 180°; when we were east or west our variation was 90°. It increased by degrees as we proceeded round it; our instruments were constructed for the purpose, delicately hung on hairs."

Among other scientific objects attained Captain Ross mentions that he "has brought a table of meteorological observations, stating the direction of the wind, its force, the state of the weather, and the height of the thermometer every hour for three years nearly at the same spot;" and that Commander Ross has written a full account of the geology, natural history, and botany of these parts. "The lowest point of the thermometer was 60½° below zero, which is 92½° below the freezing-point of Fahrenheit;

it occurred in January 1831. It was frequently as low as 80° below the freezing-point; but never more than once, for a few days, so low as 90°. We often had 85°. There was at that time no wind."

Captain Ross considers it important, too, to have ascertained how human life can be sustained in that degree of cold, adding: "We are the only persons who have succeeded in preserving the lives of people under such circumstances. I attribute it to the method we took in ventilating our hut, and covering it with ice;" and latterly to the absence of ardent spirits. The crew had a short allowance of cocoa, and used coffee made of burnt peas. They suffered most from want of water, every drop being from melted snow; their beverage was confined to that and lime-juice. In travelling the 300 miles to Fury Beach, they had, when stopping at night, no accommodation, but each man a bag to sleep in, which was resorted to in order to prevent the feet at any time from getting out of it. The face, too, was covered, and the covering tied down. A trench was dug in the snow, covered with canvas, and that being covered with snow, seven people got into it, and crept close together during the sleep time. They rested on the frozen snow. No vegetables whatever are produced there, but a little sorrel. The botanic discoveries consisted of small plants incident to all

those climates, and there are, Captain Ross thinks, three new ones, which sprang up for one month (August) in the year.

Leopold Island was established to be the N.E. point of America, and from a mountain they could see Lancaster Sound, Prince Regent's Inlet, and Barrow Straits. Captain Ross stated that he had ascertained positively that to the southward of the 74th degree there is no practical communication between the Atlantic and Pacific Oceans; but he did not mean to assert that it is impossible to discover a communication further *north*. From a difference in the altitude of the east and west of Boothia Felix, which is thirteen feet, he drew a negative presumption that there is no such passage; and on the supposition that the land is continuous northward from the 74th degree to the Pole he expected, from the rotating motion of the earth, to find that difference of altitude in the seas. He conceived that any further attempt to discover the North-West Passage would be attended with great danger and be utterly useless.

The greatest degree of latitude in which Captain Ross ever found natives was 77° N. His crew consisted of twenty-three men, of whom he brought back twenty. Two died a natural death, and one perished from the severity of the climate. With

reference to the *Magnetic Pole*, Captain Ross afterwards added, that "the needle dips more at the exact spot where the Magnetic Pole was found than at any other spot;" and he thinks that its area is within a mile. Observations connected with astronomy were made. Commander Ross had the charge of the transit; took down the transit of the stars, and also the occultation of the stars by the moon, and moon-culminating stars. Commander Ross, in his Parliamentary evidence, remarked that the whole extent of geographical discovery made by the expedition was perhaps between 600 and 700 miles of land, of which 400 or 500 were discovered by himself in conducting detached parties from the ship. Contrary to Captain Ross, he considered the late voyage "has made it still more *certain* than it was before that a North-West Passage must exist." And he doubted the accuracy of the observations by which Captain Ross conceived that he had ascertained the difference in the altitudes of the two seas east and west of the isthmus uniting Boothia with the continent of America. He had never heard of it until the question was asked by the Committee.

Mr. J. G. Children stated, in his examination, that he considered Commander Ross to have "clearly ascertained the true position of the North Magnetic Pole." He had, by experiments, determined the

spot which Professor Barlow inferred from philosophical considerations. He conceived the expedition, in respect to natural history, to have been of great importance. Commander Ross had shown him some insects, which were very curious, and had stated all the minutiæ of the history of the animals as perfectly as possible. He had opened new discoveries as to individual species which were not known to exist. Mr. Felix Booth stated, that he would not at first engage in the enterprise because there was a reward of £20,000 for any person who should discover the North-West Passage; but when, about a twelvemonth afterwards, Captain Ross informed him that the reward of £20,000 was done away with, adding "now there is no chance of an expedition going out again," he (Mr. Booth) said to him, "I am glad of it;" and observed that if Captain Ross wanted him to assist him, he was willing to do so. He did not expect to receive back any portion whatever of between £17,000 and £18,000, which one of the Committee justly termed "a munificent sacrifice of private fortune solely for the advancement of the honour of his country, the interests of science, and the gratification of the feelings of a friend." There is a "chart" on which are laid down the lines of the different voyages into the Arctic regions from the year 1818 appended to the report.

CHAPTER V.

LAND JOURNEYS, ETC.

Beside reaching the Arctic Ocean by ships efforts had been simultaneously made to reach high latitudes over land or solid ice. Up to the commencement of this century, the northern coast of North America, from Icy Cape north of Behring Strait, as far as Hudson Bay to the east, was practically unknown. At but two points had anything been achieved, and this had been done by two Hudson's Bay Company officials, Hearne and Mackenzie, who at different times had reached the north coast, and were the only civilised men who had seen the Arctic Sea from thence. Samuel Hearne began his explorations December 1770, and after an arduous journey gained the sea at the mouth of the Coppermine River. In our second chapter we alluded to Hearne's account of the Eskimo Tragedy at Bloody Falls.

Mackenzie, in 1789, traced the river which now bears his name to the point where it disembogues in the Polar Sea.

The two expeditions of 1818 had caused such

excitement in regard to Arctic exploration that it was immediately decided to send a maritime expedition under Lieut. Parry, and a land one under Lieut. John Franklin. The instructions to the latter were that he was to proceed to Hudson's Bay and thence travel northward, noting the trend of the coast line and making astronomical and geographical observations.

The expedition embarked at Gravesend on the *Prince of Wales*, bound to Hudson's Bay. At York Factory Franklin and his men disembarked, May 23, 1819, and after a toilsome journey of nearly 700 miles reached Cumberland House on the Saskatchewan River, and from thence proceeded to Fort Chipewyan. This was in the very depth of winter, with cold so intense that the mercury in the thermometers was frozen throughout the journey, and such entries as these are found in the narrative:— "Night miserably cold; tea froze in the tin pots before we could drink it." "Provisions becoming scanty; dogs without food, except a little burnt leather." Still, in sledge or canoes, the daring explorers pushed on to the site appropriately named Point Turnagain. Although this place was only $6\frac{1}{2}$ degrees of longitude east of the mouth of the Coppermine, yet the canoes had made a voyage of no less than five hundred and fifty geographical miles to arrive there.

The sufferings of the party on their return journey from cold and hunger were very great. They subsisted for the most part on a lichen called by the Canadians *tripe de roche*, varied occasionally by a roasted old boot or other scrap of leather.

Franklin's narrative of this first land journey added greatly to our scientific knowledge, and to his renown as an explorer.

A second land journey under Captain Franklin's command was dispatched in 1825, returning in 1827, after an absence of more than two years and a half. The geographical result of this expedition was the discovery and accurate delineation of over a thousand miles of the north coast of the American continent, hitherto absolutely unknown, while the scientific observations made were of great interest and value. Captain Franklin received the honour of knighthood and the honorary degree of D.C.L. of Oxford, while the Paris Geographical Society presented him with its gold medal, valued at 1,200 francs, for having made "the most important acquisition to geographical knowledge during the year."

The prolonged absence of Sir John Ross led to the despatch by the Government of a land search party under Captain Back in 1833. The captain explored the Great Fish River, but returned without finding

Ross in 1835, sailing again to the north next year in the *Terror*, only to suffer shipwreck.

In 1846–7 Dr. John Rae explored the west shore of Boothia Gulf, and discovered Boothia Felix to be a peninsula.

The success of Captain Ross led to another Government expedition in 1845. Many eminent explorers ardently desired the honour of commanding this, amongst whom was Sir John Franklin (just returned from his administration of the government of Van Diemen's Land). The First Lord of the Admiralty, however, told Sir John that he was informed he was sixty, and therefore too old. "No, my lord," was Franklin's immediate and earnest reply; "you have been misinformed, I am only fifty-nine." The decision was consequently in Franklin's favour, and he sailed in the *Erebus*, accompanied by Captain Crozier, in the *Terror*, May 9, 1845, on that memorable voyage, so unfortunate to Sir John and his men, and the occasion of so many search parties, and yet so successful and glorious. As the principal object of the expedition was the advancement of science, the officers were very carefully selected. The orders of the Admiralty were to the effect that Sir John was to make his way up Lancaster Sound to about 74° N. Lat. and 98° W. Long. Thence he was to push on as directly as

possible towards Behring Strait, minor details being left to the commander's discretion. Captain Sherard Osborn, writing in 1859, opines that this course quite coincided with Sir John's views, and observes :—

"This southern course was that of Franklin's predilection, founded on his judgment and experience. There are many in England who can recollect him pointing on his chart to the western entrance of Simpson Strait, and the adjoining coast of North America, and saying, 'If I can but get down there my work is done. Thence it's plain sailing to the westward.'"

All those connected with the expedition had perfect confidence in their tried chief. Captain Albert H. Markham, in his excellent memoir of Sir John,* quotes a letter from Captain FitzJames of the *Erebus* to Mr. John Barrow, in which, alluding to Sir John, he writes :—

"I like a man who is in earnest. Sir John Franklin read the Church Service to-day and a sermon so very beautifully that I defy any man not to feel the force of what he would convey. . . . . Every one was struck with his extreme earnestness

* Life of Sir John Franklin, and the North-West Passage, by Captain Albert H. Markham, R.N., A.D.C. London : George Philip & Son.

of manner, evidently proceeding from real conviction."

In subsequent letters the Captain writes in the same strain, but we have only room for one other extract, which runs :—

"Sir John is full of life and energy, with good judgment and a capital memory—one of the best I know. His conversation is delightful and most instructive, and of all men he is the most fitted for the command of an enterprise requiring sound sense and great perseverance. I have learnt much from him, and consider myself most fortunate in being with such a man, and he is full of benevolence and kindness withal."

The ships passed through Baffin's Bay, and eventually, when near the entrance to Wellington Channel, the ice closed around them, and they passed the winter pleasantly enough in a sheltered harbour by Beechey Island.

When, with the departure of winter, the ice broke up, the expedition fought its way bravely mile by mile, and almost inch by inch, along the coast of Boothia Felix, until the short Arctic summer was over and they were again imprisoned in the ice. The second winter came and went, and all looked forward hopefully, but an ice-encumbered sea, impassable to them, intervened between them and the open sea, so

near and yet so far, entrance to which would have enabled them to complete the "passage." But a travelling party from the ship pushing on towards Cape Herschel, saw in the distance the coast of North America, and hastened back with the joyful news that the discovery of the passage had been made, even if it had not been sailed through. Alas! on returning to the *Erebus* they found their beloved chief upon his death-bed, but he lingered long enough to hear from the exploring party that he had gained the coveted honour of being the discoverer of the passage sought for so long and so arduously.

Great was the misery of those left during that third winter, and the Polar sun of 1848 rose on an expedition diminished, weakened, disheartened.

On April 22, 1848, under the leadership of Captains Crozier and FitzJames, the remaining explorers evacuated the *Erebus* and *Terror*, and started on their long journey to the Great Fish River, where they hoped they might encounter Indians, who might help them to food. We know now that gradually the whole gallant band succumbed to exhaustion, privation, and starvation, till not a survivor was left of the heroic band who had accompanied Franklin and assisted in the great discovery.

Before speaking of the search expeditions we may mention that in 1851 Dr. John Rae surveyed the

American Arctic coast from the Mackenzie River to King William Land, and also the south-east coast of Victoria Land.

The first of the search expeditions, that of the *Enterprise* and *Investigator* (Captains Collinson and McClure), sailed from Plymouth to Behring Strait in January, 1850, and became fixed in the ice. The *Investigator* was found by Sir Edward Belcher frozen up in the Bay of Mercy in 1852, and McClure and his men were rescued. Belcher then returned towards the Atlantic, and thus McClure and his crew reached England in 1854, after actually having made the passage. McClure received the honour of knighthood, and Parliament voted £10,000 to be divided between him and his men.

Space fails us to specify all the search expeditions, but we may mention that Captain Horatio Austin's expedition was already carrying out exhaustive explorations through Lancaster Sound. The Government had sent out a couple of vessels under Captains Penny and Stewart, America had started an expedition under Lieutenant De Haven, manned by officers and seamen of the United States Navy, and sent at the expense of that munificent and philanthropic citizen of New York, Mr. Henry Grinnell; Lady Franklin had equipped the *Prince Albert* (Commander Forsyth, R.N.) at her own expense; and last, but

not least, that brave old veteran explorer, Sir John Ross, an Admiral in his seventy-fourth year, went up northward in a small schooner named the *Felix*, and the *Mary*, a little yacht of 12 tons.

The first traces of the lost explorers were discovered by Captain Ommanney, of Captain Horatio Austin's expedition, and the graves of three who had died were found by Captain Penny on Beechey Island. Diligent search was of course made in the locality, but nothing further was then discovered.

It is impossible to give details, however brief, of the journeys of the various expeditions already mentioned, and others which we are compelled to omit, but we must by no means pass over the search expedition of the *Fox*, under Captain (now Sir) Leopold McClintock, sent out by Lady Franklin in 1857. McClintock obtained many relics of Franklin's expedition from the Eskimos of Boothia, and in a cairn on Point Victory he found the record of the expedition.

Our knowledge—small as it is—of the last days of that unhappy little band of our countrymen who perished in the Arctic solitudes is due to the information collected from the Eskimos, severally by Dr. Rae in 1854, Sir Leopold McClintock in 1859, Captain Hall in 1859, and Lieutenant Schwatka in 1880. The natives reported a party of about forty

white men seen by them one spring (supposed to be 1848) travelling southward, dragging sledges and a boat, and they appeared to be very thin and weak. Other items of information were obtained, one of which, given by an old Eskimo woman, was that "they fell down and died as they walked along." Graves and skeletons were also found by the different search parties.

It must be mentioned that in 1879-80, one of the United States expeditions, under Lieutenant Schwatka, obtained irrefragable evidence that Franklin and his associates had discovered the North-West Passage. Thus at present we know that the shores of the whole route have been explored by expeditions from Great Britain proceeding in one direction and American ones travelling in the other, both having a common purpose in view, with the result that the space between Davis's Strait and Behring Strait is now correctly laid down in our charts and maps.

With regard to the North-East Passage, a few facts may be succinctly summed up. In 1827 Parry sailed to Spitzbergen, and after much toilsome effort reached 82° 40′ N. Little more was done until Sweden interested herself in the matter under the active guidance of Professor (afterwards Baron) Nordenskjöld, who in 1858–72 did much good exploring work, and at last in 1876 rounded Cape

Chelyuskin, and reached Yokohama, September 2, 1879, where he received an ovation, which was repeated at every port he touched on his homeward route.

Thus more than three centuries after Sir Hugh Willoughby the existence of the North-East Passage was effectually demonstrated, and the correctness of early opinions as to both passages absolutely vindicated.

CHAPTER VI.

THE "JEANNETTE" EXPEDITION.

WHILE it might fairly be postulated that Dr. Nansen's last Polar voyage was the result and outcome of the long series of voyages of his predecessors, yet its connection with the ill-fated *Jeannette* expedition may be said to have been yet more intimate, not only in more immediate proximity of time, but also because it was the recovery of presumed relics of that unfortunate vessel which gave Nansen the idea of the Polar current on which he greatly relied.

The *Jeannette*, commander De Long, sailed from San Francisco in 1879, on an Arctic expedition, initiated by Mr. J. G. Bennett, of the *New York Herald*, of New York. The reason that the choice fell on Captain De Long is shown by the following few particulars of his maritime antecedents.

He was born at New York, and in early life entered the American Navy. He first became known as a lover of Arctic life in connection with the *Polaris* expedition. Seventeen of the crew of the *Polaris*

had been picked up on an ice-floe by a whaler in May, 1873, and the ship itself was known to have been in great danger. The United States Government decided to send a man-of-war to the relief of this ship. The *Juniata* was the vessel chosen, and she was sent out for the work with Captain Braine in command, De Long going as lieutenant. On reaching Upernavik it was determined to search the coast farther north in a steam launch belonging to the *Juniata*, and called the *Little Juniata*. Lieutenant De Long accepted command, and carried out Captain Braine's instructions. The little boat carried a crew of eight men, and left the *Juniata* for the north on August 2. Six days later, after escaping destruction by the bursting asunder of a huge iceberg, a terrible gale sprung up, of which Lieutenant De Long writes :—

"On the afternoon of August 8, a gale from the S.E. had caused a fearful sea. We had to carry sail in order to keep the boat under control. Steam would have been no use, since the *Little Juniata* could not for one moment have steamed against such a gale. Laying to was not to be thought of, lest we should drift to the pack, and be ground to pieces. The prospect at the time was a terrible one. Icebergs near us one hundred feet in height had the spray from the sea thrown over their tops. On ap-

proaching the edge of the pack-ice, we could see a scene of great confusion. The bordering ice would be broken in large pieces, and hurled upon the more solid ice, only to be displaced by fresh pieces torn adrift by the gale, and rolled over and over upon the face of the pack. The fate of the boat and the party appeared certain. We were half-buried in the seas at times, shipping quantities of water, and deluging everything in the boat. It rained in torrents. Had our sail split or our mast gone, nothing could have been done. Providentially, everything held, and we were enabled to keep the boat under some control. The fog was very thick, making it extremely difficult to see the ice-pack until we were fairly alongside of it, in which case we had to wear ship at once, not knowing in so doing whether we could clear this grinding, crushing mass of ice or not. This state of affairs continued until Saturday, Aug. 9. We had then been in this gale thirty hours, and were in a very cold and exhausted state. Everything was completely saturated with water, and we had so much water in the boat I feared she had sprung a leak. The *Little Juniata* behaved wonderfully well, and did more than such a small craft could have been expected to do."

Under these difficulties, and with her coal almost consumed, it was clearly impossible for the *Little*

Juniata to proceed, and she had perforce to return, to Captain Braine's great relief. In a letter to his wife De Long observes:—

"Captain Tyson, who was one of the survivors of the *Polaris* picked up on the ice-floe, expressed the opinion that we were as good as lost if we met any bad weather, and that put everybody thinking very seriously how perilous a journey we had undertaken. When the *Juniata* sighted us returning, the ship was wild with excitement, the men manning the rigging and cheering us until we came alongside. When I stepped over the side, so buried in furs as to be almost invisible, they made as much fuss over me as if I had risen from the dead; and when the captain shook hands with me he was trembling from head to foot."

Some time after the return of the *Juniata*, Mr. Bennett, a gentleman of New York, resolved to equip an Arctic expedition at his own cost, and chose Lieutenant De Long as captain. The *Pandora* was purchased from Sir Allen Young in London, much strengthened and renamed the *Jeannette*.

She was equipped with everything experience and invention could suggest, even to the suggestion of a balloon on board, which was, however, relinquished in consequence of the adverse opinion of Commander Markham, a first-class authority.

The *Jeannette* was to sail from San Francisco, the route chosen being by way of Behring Strait. Although a great deal of alteration and improvement in the vessel had been effected in England, De Long found that much had to be done at San Francisco, for he wrote:—"Finally, however, all work came to an end, and the ship was turned over to me. I am perfectly satisfied with her. She is everything I want for the expedition, but a little small for all I want to carry in her. We must remember, however, we are making her do the work of an expedition that has heretofore generally required two ships. We have every appliance for all kinds of scientific experiments; our outfit is simply perfect, whether for ice navigation, astronomical work, magnetic work, gravity experiments, or collections of natural history. We have a good crew, good food, and a good ship; and I think we have the right kind of stuff to dare all that man can do."

The *Jeannette* steamed out of 'Frisco harbour on July 8, 1879, amidst the demonstrations of enthusiastic and sanguine friends. She called at St. Michael's, Aug. 12, to ship dogs, sledges, furs, and two men from Alaska to manage the dogs. Some time was lost in fruitless attempts to encounter Nordenskjold, returning in the *Vega*, and as a consequence the *Jeannette* fell in with the ice very early,

so we read in De Long's journal for September :— "On our course from eight last evening till seven this morning, N.W. (at which time we were about one hundred miles from Wrangel Land). But at the last-named hour made the pack ice ahead, and extending as far to the westward as we could see. During the forenoon ran through a lot of loose ice, making a true north course as well as possible. At 11.30, being through the loose ice, were confronted by the solid pack, which headed us to the N.E. during the afternoon watch, while we were skirting it."

This shows how soon difficulties began. Captain De Long hoped to get free of this ice. September 4 he writes:—"The day opens calm, with a thick fog. Still at anchor to the floe. We observed a gradual closing in of floes around, and a seeming drift of small pieces to the south-east through the small water spaces. The rigging is one mass of snow and frost, presenting a beautiful sight; but as we are more interested in progress than in beautiful sights, it has but little charm for us."

Entry of Sept. 6, Saturday, runs:—"This is a glorious country to learn patience in. I am hoping and praying to be able to get the ship into Herald Island, to make winter quarters. As far as the eye can range is ice, and not only does it look as if it had never broken up and become water, but it looks as if it

never would." Again he writes: "This inaction is most disagreeable, and it is even more disagreeable to see no chance for a change. The only hope of the pack breaking up is the occurrence of a gale of wind. Meanwhile we are getting no nearer Herald Island. It is unpleasant to realize that our exploration for a whole year should come to a stop on September 6, and that at a point which a sailing ship, the *Vincennes*, reached in 1855 without any difficulty. And here we are in a *steamer*, and beset in a pack before we are two months out of San Francisco."

Day after day passed, and no chance of release from the pack-ice presented itself. The *Jeannette* was caught in much the same way as the Austrian ship *Tegetthoff* had been a few years before. Sledge parties were sent off to search for better drinking water, to look for land, &c., but week after week passed by, the *Jeannette* drifting wherever the currents impelled the ice, and captain chafing sorely at his captivity.

One night he was aroused at 4 A.M., and rushing on deck saw straight ahead a mass of piled-up ice, which threatend destruction and was most narrowly escaped.

On Monday, Nov. 24, Captain De Long writes: "It has come at last; we are broken adrift from our floe! Suspecting what the continued action of this

S.W. wind would be, I made sure to have the dogs securely housed on board ship before I lay down in my clothes to get some sleep. At 5 P.M., turning out, I reached the deck-house in time to see a very severe nip. The ice under the bow was piled up as high as our figure-head, and the pressure in this direction was increasing. A floe piece with a wedge shape had pierced 'our' floe, and was exerting its force bravely. The ship creaked and groaned. Something had to give, for the pressure from ahead and abeam was very great. Suddenly the ship lifted by the stern, the wedge advanced, and our floe was split; and the port pressure decreasing, we were afloat on an even keel once more. The port floe moved slowly to the N.E., and we followed it, our snug cradle of two and a half months being split and shattered—no longer our refuge and our strength."

Melville's description of ice-pressure may help us to form some notion of what the stress is like:—"It was observed that, during the continuance of the wind, the whole body of ice moved evenly before it; but when it subsided, the mass that had been put in motion crowded and tumbled upon the far-off floes at rest, piling tumultuously upward in a manner terrific to behold. It was in one of these oppressive intervals succeeding a gale, when the roar and crash of

the distant masses could be distinctly heard, that the floe in which the *Jeannette* was embedded began splitting in all directions. The placid and almost level surface of ice suddenly heaved and swelled into great hills, buzzing and wheezing dolefully. Giant blocks pitched and rolled as though controlled by invisible hands; and the vast compressing bodies shrieked a shrill and horrible song that curdled the blood. On came the frozen waves, nearer and nearer. Seams ran and rattled across them with a thundering boom, while, silent and awe-struck, we watched their terrible progress. Sunk in an amphitheatre about five-eighths of a mile in diameter lay the ship, the bank of moving ice puffed in places to a height of fifty feet, gradually enclosing her on all sides.

"Preparations were made for her abandonment; but—what then? If the mighty circle continued to decrease escape was hopeless, death inevitable. To think of scrambling up the slippery sides of the rolling mass would be equal folly with an attempt to scale the falling waters of Niagara."*

One of the seamen of the *Jeannette* cried, awe-stricken, "The ice is approaching at the rate of one yard per minute! It is three hundred paces distant, so in three hundred minutes we shall pass over to

* "In the Lena Delta."

the Great Beyond!" But this notwithstanding, the *Jeannette's* last hour had not yet sounded.

The pugnacity of the sledge dogs caused not a little trouble. "The vulnerable places are the ears and belly. I have seen an attacked dog run and, lying on his stomach, shove his head into a snow-bank with impunity, while his foes were choking over the hair they tore out of his back. The dogs break up into little friendly gangs, but even in these they sometimes fight. Occasionally one of their number would be sent to Coventry, and not allowed to come within a quarter of a mile of the ship until his time was up. Teams or single dogs were allowed to go away with nothing worse than a howling salute; but on their return they were savagely attacked by the others, who resented the return of their comrades as an insult.

"Their cunning is extraordinary. Going out the other night at twelve for meteorological observations, about a dozen of them came around me in great excitement. Looking around for a cause, I observed a good-sized dog head first in a barrel at an angle, with only his tail and his flanks sticking out. He had gone in for some walrus meat at the bottom, and no dog had driven him out, because his stern view was not recognisable as belonging to a bully or not. Anxious to save the meat, I went to the barrel and

drove him out, when half of the gang, recognising him as no great fighter, pitched into him, while the other half fought among themselves for the entry into the barrel. For fear of catching a tartar, they waited for some one to solve the conundrum, 'Who is in the barrel?'

"'Hope deferred maketh the heart sick,' and there ensued much of this heart-sickness in the little band. They had hoped to reach the Pole itself, but the short Arctic summer sped and the ice was still 'gripping' the *Jeannette* nearly down to her keel.

"The terrible circle slowly contracted to within a few hundred feet, and then stopped; and all was quiet, save the roar of the under-running floes at the bottom of the ship.

"With light hearts the men dispersed themselves upon the ice, climbing the slopes of the marble-like basin, leaping from block to block, clambering up pinnacles and tumbling down with laughter, calling each other's attention to the marvellous shapes and positions of the confused heaps, speculating upon the chances of escape had such an one toppled over on the vessel, all hailing and shouting in boyish glee—when suddenly the dread cry of 'Man the pumps!' put a check to their short-lived sport, and sent every-one scudding back."

On Jan. 26 the sun again appeared above the horizon after the sunless Arctic winter. By May 1 the orb of day was visible at midnight, and the heat was considerable. De Long writes that "such a thing as remaining on board ship was out of the question. Everybody . . . was out on the ice."

On Aug. 22 (his birthday) the captain had a rather exciting adventure with a Polar bear, which he thus narrates:—

"Looking over my shoulder, to my astonishment I found my eyes resting on a bear not quite a hundred feet off, and who, judging by his looks, was quite as astonished as I was. The relative situation was worthy of a photograph. Here was a predicament. To run was out of the question for me. There was no water between me and the bear, but I was jammed in a narrow lead, and he stood looking at me. Looking a bear in the face is very romantic, but not practicable; and I found the bear recovering from his astonishment, and advancing toward me. I then yelled, 'On board ship there! A bear! a bear!' but got no answer. Bruin by this time was about fifty feet from me, so close that I could distinctly see where the short hair ended at the edge of his beautiful black nose. Hearing my shout, he stopped and looked at me wonderingly. I again shouted, 'On board there!' and somebody answered,

'Halloa!' Mentally calculating my chances, I again yelled, 'A bear! a bear!' and at the same time I raised an oar to fend him off, should Bruin come to the boat. He stood still, however, and looked as if he could not quite make it out. Just then a string of men and dogs rushing around the *Alora* attracted his attention, and he gazed at them until, judging they meant him no good, he hurried and ran so fast that before the men and dogs could get on his trail he was out of range. Lesson for me, 'Never go away from the ship without a rifle!'"

Winter came upon them again with the horrors of ice-imprisonment and inaction; but they were hopeful for the coming of the New Year, 1881, although the commander wrote sorrowfully:—

"People beset in the pack before always drifted somewhere to some land; but we are drifting about like a modern *Flying Dutchman*, never getting anywhere, but always restless and on the move. Coals are burning up, food is being consumed, the pumps are still going, and thirty-three people are wearing out their lives and souls like men doomed to imprisonment for life. If this next summer comes and goes like the last without any result, what reasonable mind can be patient in contemplation of the future?"

Jan. 1, 1881, the captain writes:—

"I begin the New Year in this book by turning over a new leaf, and I hope to God we are turning over a new year of luck. No greater advance toward the Pole, or toward the accomplishment of some other object worthy of consideration, would be humiliating indeed. I am, of course, thankful and grateful for our preservation in many perils, for our continued good health, and for our undiminished zeal and enthusiasm, as manifested last night, when the men made the deck-house ring with their cheers at the end of my remarks; but I want to achieve something to save us from disappointment and mortification. Melville and Dunbar sat up with me to see the old year out and the new year in. At midnight, when the men had finished a verse and chorus from 'Marching through Georgia,' eight bells were struck for the old year, three cheers were given for the ship, eight bells more were struck for the new year, and 1881 was thus officially inaugurated in the United States steamer *Jeannette*, in latitude 73° 48′ N., and longitude 177° 32′ E."

During January the weather became variable, but the captain hoped they might "perhaps get adrift from these remorseless prison walls of ice that have held us so firmly for seven months."

But this relief did not come, although early in March this party shared the excitement of a

bear-and-dog fight, thus described by the captain:—

"A bear of 374 pounds' weight was captured to-day, after a tremendous fight. At about 8 A.M. he came up from astern, and when about five hundred yards distant was sighted by the dogs, about twenty of whom made for him, and brought him to. He fought tooth and nail, and flung the dogs off right and left with many a cut and scratch. Chipp saw the fight from the deck-house, and says that when the dogs charged the fur would fly, and then a dog would be sent through the air, torn and repulsed. When the men came within range, Nindemann fired, the ball passing through the bear, glancing against some bone, and, to our great sorrow, hitting poor Plug Ugly, entering his lung and causing his death. When injuries came to be examined, we found it a very costly bit of bear. One dog killed, Plug Ugly; Prince with his back and shoulder cut, where Bruin had caught him in his mouth and flung him; Tom, Wolf, and Bingo, all much hurt. Snoozer had his mouth lengthened by a claw on the cheek; Smike was torn in two places; and cuts of more or less importance were more common. Such a fight we have never had. Ordinarily bears do not fight much, generally jumping around and around to keep

face to the dogs; but this one had her war-paint on with a vengeance."

After twenty months' captivity in the ice-pack, the cry "Land!" was heard on Monday, May 16. Two islands, Jeannette Island and Henriette Island, were discovered, and Melville started with a sledging party, having great trouble with the dogs, who would not swim when they happened on a lead of water, and had to be pulled across with ropes. He says:—

"There is no greater violence done the eternal cause of truth than in those pictures where the Esquimaux are represented as calmly sitting in shoe-shaped sleds, with the lashes of their long whips trailing gracefully behind, while the dogs dash in full cry and perfect unison across smooth expanses of snow. If depicted 'true to nature,' the scene changes its aspect considerably; it is quite as full of action, but not of progress. A pandemonium of horrors. Dogs yelling, barking, snapping, and fighting; the leaders in the rear, and the wheelers (?) in the middle, all tied in a knot and as hopelessly tangled up as a basketful of eels."*

On another occasion the dogs "gibbed" at the water with such obstinacy, that they and the sledge

* "In the Lena Delta."

and disabled Mr. Dunbar had to be dragged over *vi et armis*.

"I finally seized the head dog by the neck, and, followed by the others, sprang forward, dragging team and all after me. Then we waded and struggled through the slush and water, the sled wholly immersed, with Mr. Dunbar still clinging to the cross-bars, and Ericksen performing herculean feats of strength. More than once, when the sled stuck fast, did he place his brawny shoulders under the boat and lift it bodily out. Indeed, we toiled so hard that when the ridge at the edge of the ice-foot was reached, we were barely able to crawl over it and drag Dunbar from the sea like some great seal."

CHAPTER VII.

FAREWELL TO "JEANNETTE."

On June 12 (Sunday) the pressure of the floe-ice became so intense that it was clear the *Jeannette* was doomed. Captain De Long says :—

"At 5 o'clock the pressure was renewed, and continued with tremendous force, the ship crackling in every part. The spar-deck began to buckle up, and the starboard side seemed again on the point of coming in. Orders were now given to get out provisions, clothing, bedding, ship's books and papers, and to remove all sick to a place of safety. While engaged in this work, another tremendous pressure was received, and at 6 P.M. it was found that the ship was beginning to fill. From that time forward every effort was devoted to getting provisions, etc., on the ice, and it was not desisted from until the water had risen to the spar-deck, the ship being heeled to starboard about 30°. The entire starboard side of the spar-deck was submerged, the rail being under water, and the water-line reaching to the hatch-coamings. The starboard side was evidently broken in abreast of

the mainmast, and the ship was settling fast. Our ensign had been hoisted at the mizzen, and every preparation made for abandoning, and at 8 P.M. everybody was ordered to leave the ship. Assembling on the floe, we dragged all our boats and provisions clear of bad cracks, and prepared to camp down for the night."

June 13.—"At 4 A.M. the *Jeannette* went down, and only the foremast showed her remains."

Mr. Melville thus describes the end of the fated vessel: "During the early hours of the morning, Kuehne, the watch, had attentively observed the ship, as she swayed to and fro, creaking and groaning with the movements of the ice. Towards 4 o'clock, the hour for him to summon relief, he suddenly announced, in addition to his stage whisper to Bartlett, 'Turn out if you want to see the last of the *Jeannette*. There she goes! there she goes!' Most of us had barely time to arise and look out, when, amid the rattling and banging of her timbers and iron work, the ship righted and stood almost upright; the floes that had come in and crushed her slowly backed off; and as she sank with slightly accelerated velocity, the yard-arms were stripped and broken upward parallel to the masts; and so, like a great gaunt skeleton, clapped its hands above its head, she plunged out of sight. Those of us who saw her go

down, did so with mingled feelings of sadness and relief. We were now utterly isolated, beyond any rational hope of aid; with our proper means of escape, to which so many pleasant associations attached, destroyed before our eyes; and hence it was no wonder we felt lonely, and in a sense that few can appreciate. But we were satisfied, since we knew full well that the ship's usefulness had long ago passed away, and we could now start at once, the sooner the better, on our long march to the south."

So the party started in three boats, each containing a sledge, leaving five other sledges to be dragged.

As there is no darkness in an Arctic summer, all their journeys were done by night, that is, between 6 P.M. and 6 A.M. As nearly as practicable they observed this routine:—

Call all hands	4.30 P.M.
Breakfast	5 ,,
Break camp	5.40 ,,
Under way	6 ,,
Halt	11.30 ,,
Dinner	Midnight.
Pack up	12.40 A.M.
Under way	1 ,,
Halt, pitch camp	6 ,,
Lime-juice	6 ,,
Supper	6.30 ,,
Set watch, pipe down, turn in	7 ,,

Captain De Long, it may be observed, hoped to cross the ice to the New Siberian Islands, and then get by boat to the mouth of the Lena River. The journey over the ice was, however, very slow and tedious, and De Long writes :—

"Now that we have two of the sleds lightened, and the dogs' work increased, I find that the men have to go over the same ground four times each way, minus one, and the dogs five, minus one. This means, that at the first trip they bring up two sleds; second trip, two sleds; third trip, first cutter; fourth trip, second cutter and whaleboat; and, generally speaking, they and the dog sleds finish the day's work at the same time. One mile made, therefore, means seven miles travelled by men, and nine by sleds. What with coming and going, and a constant succession of ferriages and bridges fell to our lot. The wind seemed very searching, and finally our accustomed fog and misty rain set in, making us wet as well as cold."

Tent life during the daily rest on the ice was not very comforting, for no fire could be spared, except for cooking purposes. How great was the labour caused by the heavy weights which had to be dragged along, an extract from the diary of July 9 will show. The journey seemed wearisome and never-ending, even after alterations had been made with a view to lightening the toil makes every bone ache.

Engineer Melville endorses the captain when he writes :—

"Many and many times, after a day's march, have I seen no less than six of my men standing with their bare feet on the ice, having worn off the very soles of their stockings. Nor would it have been possible to avoid this, since we could not have carried enough 'oog-joog' skin, of which mocassin soles are made, to have kept alone our boots in repair. Many were the devices to which we resorted in order to keep our feet from off the ice. At first we made soles by sewing patch upon patch of 'oog-joog.' Then we tried the leather of the oar-looms, but it was too slippery, as was also the sheet rubber, which some of the men had thrown away. We used canvas; sewed our knapsack-straps into little patches for our heels and the balls of our feet; plaited rope-yarns, hemp, and manilla into a similar protection, with soles of wood; and plaited whole mats the shape of our feet. A large number marched with their toes protruding through their mocassins; some with the 'uppers' full of holes, out of which the water and slush spurted at every step. Yet no one murmured so long as his feet were clear of the ice, and I have here to say that no ship's company ever endured such severe toil with such little complaint. Another crew perhaps may be found to do as well, but better—never!"

At length the New Siberian Islands were reached; but after a night's rest on shore the boats were off again. The great object of De Long now was to reach some inhabited locality where they could obtain food of the natives. At length they reached Semonovski Island. There some of the party went out and shot a deer. This caused great rejoicing, and a right royal feast followed.

Sunday, Sept. 11, was the ninety-first day since the ship went down and the crew were thrown out on the ice. It was on this island that the captain left a record of his visit to it, in which was recorded the fact that only seven days' provisions were left with them, and they trusted soon to reach some settlement on the Lena River.

Darker and darker gathered the clouds of mishap and tribulation. Here, for example, is a harrowing picture from Melville's book before quoted from :—

"On Sept. 7, pumping and baling to keep the boat afloat, we suddenly came unawares upon the western side of a great floe-piece, over which the sea was breaking so terribly that for us to come into contact with it meant certain destruction. It was floating from four to six feet above the water, its sides either perpendicular or undershot by the action of the waves which dashed madly over it, the surf flying in the air to a height of twenty feet. Round about, down

sail, and away we pulled for our lives. De Long being fifty or one hundred yards in advance of me, and so much nearer danger, hailed me to take him in tow, which I did, and together we barely managed to hold our precarious position. The second cutter was away behind again, but upon coming up seized the whale-boat's painter; and so we struggled in line, and at last succeeded in clearing the weather-edge of the floe. It was a long pull and a hard pull. The sea roared and thundered against the cold, bleak mass of ice, flying away from it like snow-flakes, and freezing as it flew; the sailors, blinded by the wind and spray, pulled manfully at the oars, their bare hands frozen and bleeding; and the boats tossed capriciously about with the wild waves and the unequal strain of the tow-line. Drenched to the skin by the cruel icy seas, which poured in and nigh filled us, we struggled on."

Hereabouts the three boats separated. The first cutter was commanded by the captain, the whale-boat by Melville, and the second cutter by Cripps. Of this boat or her crew no trace has been met with since.

Of those in the first cutter, Captain De Long records under date, "Lena Delta, Sept. 19, 1881," the names of himself and thirteen companions, and adds:—

"The thirty-three persons composing the officers and crew of the *Jeannette* left Semonovski Island in three boats on the morning of the 12th inst. (one week ago). That same night we were separated in a gale of wind, and I have seen nothing of them since. Orders had been given, in event of such an accident, for each boat-load to make the best of their way to a settlement on the Lena River, before waiting for anybody. My boat made the land in the morning of the 16th inst., and I suppose we are at the Lena Delta. I have had no chance to get sights for position since I left the island. After trying for two days to get inshore without grounding, or to reach one of the river's mouths, I abandoned my boat, and we waded one and a half miles ashore, carrying our provisions and outfit with us. We must now try, with God's help, to walk to a settlement, the nearest of which I believe to be ninety-five miles distant. We are all well, have four days' provisions, arms, and ammunition, and are carrying with us only ship's books and papers, with blankets, tents, and some medicines, therefore our chances of getting through seem good."

Sickness and starvation beset the little band, and at length we find the following terrible entry:—

"*Friday, Oct.* 7, 1881. — The undermentioned officers and men of the late U.S. steamer *Jeannette*

are leaving here this morning, to make a forced march to Ku Mark Surt, or some other settlement on the Lena River. We reached here on Tuesday, Oct. 4, with a disabled comrade, H. H. Ericksen (seaman), who died yesterday morning, and was buried in the river at noon. His death resulted from frost-bite and exhaustion, due to consequent exposure. The rest of us are well, but have *no provisions left*, having eaten our last this morning."

Nindemann and Noros were the two chosen to go forward and make the forced march to Ku Mark Surt. They started on Sunday, Oct. 9, and those whom they left raised a feeble cheer. They had the hearts of heroes, but courage availed not. One by one they died, and their deaths are noted by the Captain. On the 123rd day he writes :—

"Missed Lee. Went down a hole in the bank and camped. Sent back for Lee. He had turned back, lain down, and was ready to die. All united in saying Lord's Prayer and Creed after supper. Living gale of wind. Horrible night."

The entries grow more and more hopeless.

"Oct. 17, Monday—one hundred and twenty-seventh day. Alexey dying. Doctor baptized him. Read prayers for sick. Mr. Collins' birthday—forty years old. About sunset Alexey died. Exhaustion from starvation."

Oct. 22, Saturday—one hundred and thirty-second day. Too weak to carry bodies of Lee and Kaack out on the ice. The doctor, Collins, and I carried them around the corner, out of sight. Then my eye closed up."

The last entry is:—

"Oct. 30, Sunday—one hundred and fortieth day. Boyd and Görtz died during the night. Mr. Collins dying."

And that is the last we know of that brave band until, months after, their dead bodies were discovered in the snow, and reverently interred.

Meanwhile the men sent forward—Nindemann and Noros—were gamely struggling on in the direction commanded them by Captain De Long. At length they reached Ku Mark Surt, but could not make themselves understood. Thence they pushed on to Belun, where Engineer Melville, whom we left in charge of the whale-boat, found them.

Melville, more fortunate than his captain, had managed to gain the Siberian coast, and, with great difficulty, to make his way to Belun. As soon as he had learned the intelligence of De Long and his companions, he organised a party of Cossacks and set out in search of them.

One picture of what this brave and energetic man endured on this journey must be given. At

part of the route they found themselves forcing their way through the heaped-up masses of ice formed by the frozen river. "Standing on smooth patches of ice, it was impossible to resist the strong gale of wind, which, by sheer force, swept sleds, dogs, and men to leeward. Ah! it was cold! The blast seemed to go clean through me. . . . We laboured along among the boulders of ice for more than a mile, and then opening out at length into the clear bed of the river, we turned to the west bank, where there was a sufficient snowfall; and, digging a hole, as before, in the drift, set up our sleds to windward, and crawled, cold, supperless, and altogether miserable, into our sleeping-bags, beyond the fiercest fury of the storm. . . . It is very Arctic weather when the sleeper's nose is frozen, and then his thumb, when he tries to thaw out his nose by holding it in the palm of his hand, with thumb extended and exposed; which thumb he later on thrusts into his mouth to thaw, and so on, *ad nauseam*. Thus we lay through the night, and when day came it brought no lull to the storm; and since we could not hope to push forward, we remained all next awful day without food, cramped and motionless, with the poor dogs cuddled shivering on top to keep us warm."

At length localities were reached which Nindemann

was able to recognise. A Remington rifle was discovered, and Melville set two natives to work digging in the snow. He goes on :—

"I then climbed to the top of the bank, intending to obtain a round of compass bearings. La Kentie accompanied me, carrying the compass; and as we walked along, I noticed some old clothing, mittens, etc., lying on the high ground above the river. Nearing the spot where the fire had been built, I observed something dark in the snow, and upon going toward it was rewarded by the discovery of the party's tea-kettle, a cylindrical copper vessel, blackened by many fires. 'What! the kettle,' I exclaimed, and so saying, advanced to pick it up, when suddenly I caught sight of three objects, and one of these *was the hand and arm* of a body raised out of the snow. La Kentie gave one look and started back in terror, crossing himself. I identified De Long at a glance by his coat. He lay on his right side, with his right hand under his cheek, his head pointing north, and his face turned toward the west. His feet were drawn slightly up, as though he were sleeping; his left arm was raised with the elbow bent, and his hand, thus horizontally lifted, was bare. About four feet back of him, or toward the east, I found his small note-book, or ice-journal, where he had tossed it with his left hand, which looked as though

it had never recovered from the act, but had frozen as I found it, upraised."

Dr. Ambler and Ah Sam, the Chinese cook, were the next two found. Melville's eye was the first to read the entries in the journal, describing the suffering of that awful march and the successive deaths. The natives before long found two other bodies.

By careful and continuous work all the bodies were recovered, except those of Alexey and Ericksen. The former had been buried in the river bed, and there was little hope of finding any trace of him. When all were found, Melville resolved to bury them on the scene of their lonely death. "The burial-ground is a bold promontory, with a perpendicular face, overlooking the frozen Polar Sea. The rocky head of the mountain, cold and austere as the Sphinx, frowns upon the spot where the party perished; and considering its weather-beaten and time-worn aspect, it is altogether fitting that here they should rest."

A tomb was excavated on the top of this hill, called "Monument Point," and thither, when all was ready, the bodies were carried. "It was a memorable sight. The long train of dog-teams winding their tortuous way across the *tundra* and ice-field, and up the steep ascent of the lone mountain-top, where, in the awful silence and solitude of that vast waste of Arctic snow, with no requiem but the howling of the remorseless

storm, which cruelly cut our faces, we tenderly laid our dead comrades to rest—as I then supposed, for ever. There, in sight of the spot where they fell, the scene of their suffering and heroic endeavour, where the everlasting snows would be their winding-sheet, and the fierce Polar blasts, which pierced their poor unclad bodies in life, would wail their wild dirge through all time—there we buried them, and surely heroes never found fitter resting-place. We were overawed by the very simplicity of the obsequies, the oppressive stillness, the wonderful wilderness of white, rolling endlessly around us; and, more than all, by our sorrowful memories of the dead."

All the personal possessions of the dead were carefully treasured for the sorrowing relatives in the United States, and all the records, instruments, and objects belonging to the expedition were gathered up for transport to Washington. And so ends another of the thrilling episodes of Arctic exploration—heroic and pathetic, like the passing of our own Franklin. And again the grand old salt blood of the Norse Vikings, which courses in the veins of the Americans as in our own, has vindicated itself as still instinct with its antique heroism, as free from craven fear of death—let the King of Terrors come in what form he pleases.

CHAPTER VIII.

DR. NANSEN AND HIS HOME.

HAVING thus briefly sketched the inception and progress of Arctic exploration, let us now turn to the real and special subject of our little volume—a description of the intrepid young Norwegian explorer, whose energy and bravery have availed to carry him, if not to the great objective of all Arctic explorers itself, at least very much nearer to it than any previous visitor to those icebound regions had attained; that is to say, that Dr. Fridtjof Nansen has got one hundred and seventy miles nearer to the North Pole than any previous explorer.

Nothing, surely, could have been more appropriate and befitting than that the daring feat should have been achieved by one of the Norse race and nationality. For, at the very dawn of history, we see amongst the mists and shadows of tradition emerge the fact that the bravest clan of the Aryan migrants to Europe followed Odin, the heroic, to the hyperborean regions of ice and snow, leaving the less virile races—the Greeks, Latins, Kelts, etc.—

the softer climes and more fertile lands of Southern Europe. Most daring of navigators, the old Norsemen had not simply to paddle their galleys lazily through the smooth waters of a landlocked and tideless sea—as did the Phœnicians, Greeks, and Romans, on the expanse of the Mediterranean. Instead, the Norseman put forth on the stormy billows of the North Sea, and his keel ploughed far and wide on that and other oceans. No silken darling of the South Sea he, whom tempests should intimidate, or giant icebergs looming high above his tallest mast appal! Perhaps the best indication of the reckless daring of those old Norse Vikings, or sea raiders, to whom the stormiest strife of the elements and the clamour of swords and shields were equally welcome, is afforded by the now well-ascertained fact, that, anticipating the venturesome Genoese, the Norwegian navigators centuries back crossed over to the shores of the New World, and planted settlements in it. The relations of the sagas of the Icelandic monks preserved at Rouen, and which are believed to have been compiled *circa* 1148, record that the Norsemen's discovery of the New World antedated that of Columbus by some five hundred years.

A truly typical descendant of those brave old sea-rovers is Dr. Fridtjof Nansen, the Arctic explorer. Alike in name, in spirit, and in physique, is he verit-

ably their nineteenth-century representative, and, indeed, in bodily presence he would make a famous model for an artist for a St. Olaf, an Einar Tamberskelver, or a Harald Hardraada. The doctor's clear-cut face is marked by a heroic caste of determination, is surmounted by abundant fair hair, and is lighted by a pair of clear blue eyes, keen as steel in their regard. He stands over six feet, and his muscular and well-knit frame is supple as it is strong, whilst, as is absolutely indispensable for an Arctic explorer, his physical health is perfect. Like all energetic spirits, Nansen is fond of rapid movement. During his several short visits to our shores (before the present one) he appears to have derived considerable satisfaction from the speed attained by our trains. Mrs. Alec Tweedie records his *dictum* that, with Norwegian carriages and the speed of our railways, travelling would become ideal and perfect. Walking himself very rapidly, and with an easy, swinging "lope" (to use an Americanism), the doctor invariably attracted the notice of those whom he passed by, in consequence of his rapid, easy gait. Probably constant practice on the "ski," or Norwegian snow-shoes (with which great speed is attainable), has helped to nourish the explorer's fondness for rapid motion.

We have hinted that the font-name of the subject

DR. NANSEN ON THE SKI WITH DOG AND SLEDGE.

of this monograph links him with the old Norse heroes. That falls out in this way: The name "Fridtjof" signifies "the thief of peace," than which a more appropriate name could not be imagined for a Viking of yore, for along every coast—including those of our own islands—the unfortunate dwellers by the sea too often found that the Viking visitors stole all their peace away, as probably also their property and lives.

"Poeta nascitur, non fit," Horace assures us, and probably the Roman bard's *dictum* applies to many other classes of idiosyncrasy besides that of the poet. Of our hero it is to be noted, however, that his early bent does not appear to have been towards travel or exploration, but in the direction of science—natural history. Several works in Norwegian from his pen on zoological subjects have been published.

The genesis of Dr. Nansen's passion for Polar exploration is to be found in the fact that, in 1882, he made his first acquaintance with the Arctic regions by taking a voyage, as a naturalist, in the *Viking*, a Norwegian sealer, in much the same capacity, in fact, that Dr. Charles Darwin accompanied the *Challenger*. The vessel in which Nansen sailed became imprisoned for some time by ice on the east coast of Greenland, and chafing at inaction and gazing yearningly northward, there stole into the

spirit of the young Norwegian an influx of the strange and subtle *ethos*, radiated, perchance, from the North star or the midnight sun, which draws congenial spirits by a perfectly irresistible atrraction Polewards. How strong that fascinating attraction is the ice-topped cairns which cover the bones of so many explorers are extant to testify, our own Sir John Franklin amongst them. While he was icebound here Dr. Nansen began to form theories anent the mysterious unknown and unpenetrated icy expanse spread out before his gaze, and felt that he was imperatively called upon to endeavour to verify them.

In the Introduction to his book—"The First Crossing to Greenland"—Nansen observes:—

"In the summer of 1882 I was on board the *Viking*, a Norway sealer, which was caught in the ice off that part of the east coast of Greenland which is still unexplored, or, more precisely, somewhere in the neighbourhood of lat. 66° 50′ N. For more than three weeks we were absolutely fixed, and every day, to the terror of the crew, we drifted nearer to the rocky coast. Behind the fields of floating ice lay peaks and glaciers glittering in the sunlight, and at evening and through the night, when the sun sank lower and set, the heavens in a blaze behind them, the wild beauty of the scene was raised to its highest.

Many times a day from the mast-top were my glances turned westward, and it is not to be wondered at that a young man's fancy was drawn irresistibly to the charm and mysteries of this unknown world. Unceasingly did I ponder over plans for reaching this coast which so many had sought in vain, and I came to the conclusion that it must be possible to reach it, if not by forcing a ship through the ice, which was the method tried hitherto, then by crossing the floes on foot, and dragging one's boat with one. One day, indeed, I incontinently proposed to make the attempt, and walk over the ice to shore alone; but this scheme came to nothing, because the captain answered that he could not, in the circumstances, allow anyone to leave the ship for a length of time."*

The doctor then goes on to tell his readers that, soon after his return home, his attention was aroused by a telegram from Nordenskjöld, announcing that he had returned from endless snow-fields in Greenland, on which his Lapps had covered enormous distances on "ski," those singular Norwegian snow-shoes, of which the reader will hear much as we proceed. Here was the *mot d'énigme* for Nansen, and now his plans lay clear before him.

* "The First Crossing to Greenland." By Fridtjof Nansen. Translated by H. M. Gepp, B.A.

Before speaking of his achievements on his first journey, however, we may mention a few personal items.

Dr. Nansen is now thirty-three years of age. A short time after his return from Greenland he espoused a daughter of the late Professor Sars of Christiania. In *physique* Fru Nansen is the very antithesis of her husband, but in spirit she is his *alter ego*. She is a bright, jolly-looking little brunette, with dark hair and eyes. She received in her girlhood a perfect musical education, and is an accomplished vocalist. Mentally, she possesses, like her husband, the daring courage and the grand endurance of the Scandinavian race. She will accompany the doctor on the most trying excursions on the ski, in travelling upon which she is as dexterous as her partner. She ardently desired to accompany Dr. Nansen on his last voyage, but, fearful for her health, he was compelled to refuse.

Dr. Nansen had a very pretty little house built for himself and his wife at Lysaker, in the environs of Christiania. It was built to his orders, and is a typical house of the ancient Norse pattern, not unlike the log-houses which used to be erected by the early American settlers, the walls being made of pine trunks notched together at the angles. What this kind of edifice is may be told from a description by

Hjalmar Hjorth Boyesen of some antique houses preserved by King Oscar II. of Sweden. Boyesen says:—

"Oscar II. has a claim upon our gratitude for having removed to this vicinity (Bygdö Kongsgaard) two old Norse dwelling-houses, one of great antiquity and the other of more recent date. The former is of the oldest and most primitive type known in Norway, having no windows and being lighted from a hole in the roof, which also serves for the escape of the smoke from the hearth.

"It is built of logs, and all the furniture appears to be of domestic manufacture. The huge crane, projecting from the wall over the rude, chimneyless fireplace, in the middle of the floor, must have looked down upon many generations of toil-hardened men and women who were born, grew up, and perhaps passed no small part of their weather-beaten unillumined lives between these smoke-blackened walls. The bed in the corner looks monstrously uncouth; and the clumsy chair, made out of a big log (Kubbestol), must be haunted by the ghosts of a thousand fairy tales. How all the shapes of terror with which Germanic tradition teems must have thriven in the legendary dusk that always hovered under these rafters! What delicious chills of horror crept down the children's backs as they sat on the

floor, listening, with distended eyes, to their grand-dame's blood-curdling accounts of were-wolves, the wild chase, wraiths and all manner of uncomfortable goblins!

"The decorative carving on the doorposts, the bed and the sideboard indicate that this was by no means a dwelling of a poor man, but that of a fairly well-to-do peasant who ploughed his own ancestral acres. The sideboard, by the way, in spite of its great antiquity, has an extremely modern look, which seems to prove that this particular article of furniture has been exempt from the universal process of evolution. What, however, interests me so profoundly in this primitive smoke-hut is the measure it gives of the simplicity of life, when mankind, comparatively speaking, had but recently emerged from the woods. It is so touchingly eloquent of the bareness, the grimness, the sturdy robustness of existence, when no effective restraints had yet been placed upon the passions and appetites, and the meek held his precarious tenure of life at the sufferance of the strong. The furniture had to be scant and of a substantial sort, when the master of the house was perhaps subject to the berserkir rage, and when bloody frays were looked upon as normal occurrences at festal gatherings. It is told that even at the beginning of the present century there were parishes in Norway

DR. NANSEN DRIVING DOG ON SKI.

where wives, as a prudent precaution, brought their husbands' shrouds along whenever they went to a wedding or a funeral feast.

"The so-called *Hovestue* at Bygdö belongs to a later period and can scarcely be much older than the seventeenth century. Windows, ceiling and chimney are so many landmarks in the march of civilization. There were in my childhood many farmhouses in Norway of exactly this pattern, and there are probably a good many remaining yet. This is the usual setting of the lives of the most prosperous of the Norwegian peasantry—many of whom trace their pedigree, through a long procession of generations, back to the tribal aristocracy of the saga period, and perhaps, on the spindle side, to the old royal house of Norway.

"The interior of the Stabur or storehouse is fitted up with some beautiful specimens of Norwegian wood-carving, and a series of old portraits which evidently did not belong there. The ancient church, which has been removed from Golol in Hallingdal, is one of the few remaining examples of the so-called *Stavekirker*, and represents the only attempt at a national ecclesiastical architecture which Norway has to show. I fancy this type must have been an adaptation of the old pagan temple or *Hov*. The gloom, the gauntness, the oppressively cramped pro-

portions of the interior point straight back into the pagan dusk of Germanic antiquity, when bullocks were slain to Odin and Thor on the sacrificial stone, and the worshippers gorged themselves and got royally drunk in honour of their gods. The altar here (as well as in Borgund Church in Laerdal), suggests, in fact, blood-offering and a host of pagan associations. The men of the woods who first gathered in this strange, tarred, wooden temple, had to leave their weapons in a special armoury outside, lest they should fall to quarrelling and perchance kill each other during the worship. For how tempting, how sweetly alluring to give your enemy his death-wound, when he sat there so unsuspecting, within reach of your axe. Their allegiance to Christ the White was largely a matter of compulsion, or, at least, a prudent choice of the stronger god who had demonstrated his superiority by the indisputable verdict of his sword. Odin, Thor and Frey were, indeed, not dead or non-existent; but they had been beaten and had no more any favours to bestow upon their worshippers. The soaring aspirations, the fervent ecstasy, the ascetic self-effacement and humility which found such glorious expression in the Gothic cathedral, were here, perhaps, in embryo; but the sturdy self-reliance of primitive life had as yet only evoked those emotions which tend to harden

and toughen the personality, and foster an overweening self-assertion. Such sentiments were strongly reflected in the old Norse Asa faith which did not exalt its gods very much above humanity, but made almost comrades of them, and permitted the worshipper to scold and threaten them if they failed to live up to their obligations."*

The Nansens' house, as may be expected, is full of Greenland trophies. Nansen's study is a huge room. It is carpeted with the skins of three white bears which once gave Nansen a very narrow squeak for his life. His writing-table is a curious affair; it looks exactly like a colossal kitchen-table, being made of plain deal, but the legs are hewn out of solid tree-trunks, carved into weird-looking serpents with their tails in their mouths. No ordinary table would support the weight of the doctor's correspondence. For many months before he started on his Polar expedition he received about four hundred letters a day from persons in every quarter of the globe volunteering their services. Many of these letters contained offers of huge sums of money to be allowed to join the expedition. This, however, was of course a privilege accorded to fitness only—not to wealth.

* *Godey Magazine*, 1893. New York.

None of the Arctic explorers were in luck in 1882. Sir G. Gore-Booth, in the *Kara*, and the Dutch exploring vessel *William Barents*, both failed to make their way into Kara Sea. The trading vessels *Louise* and *Nordenskjöld*, destined for the Zenisei, gave up their voyages in despair, and they left behind them the *Dymphna* (Captain Hovgaard) and the *Varna*, hemmed in by ice near Waigat Island. Of these two vessels the *Dymphna* was bound for Cape Chelyuskin, whilst the *Varna* was engaged in conveying a body of Dutch meteorologists to Dickson's Harbour on the Zenisei.

The *Varna* naturally leads us to speak of the realisation of the late Captain Weyprecht's plan for girdling the Pole with a belt of scientific observatories. First suggested in 1875, this systematic inquiry into the meteorological and magnetic phenomena within the Polar regions was carried out with the co-operation of the leading governments of the world. Fifteen principal and twenty-four subsidiary stations were occupied by nearly 200 scientific men engaged in the record of atmospheric phenomena on a well-matured plan. These observations were to be continued until the end of August, 1883, and the observers, on the termination of their labours, would hold high festival in London to exchange views and congratulations. The fifteen principal stations were :

a point in the Lena delta and Karmankuli Bay in Novaya Zemlya (Russia); Dickson Harbour, at the mouth of the Zenisei (Holland); Sodan Kylar, in Finland, and Bossekop, in Lapland (Norway); Jan Mayen (Austria); Cape Thorsden, in Spitzbergen (Sweden); Godthaab, in Greenland (Denmark); Cumberland Sound (Germany); Fort Gonger, in Lady Franklin Bay, and Point Barrow (United States); Fort Rae, on the Slave Lake (Canada and England); Cape Horn (France); South Georgia (Germany); and Villa.

Captain Weyprecht's great scheme of circumpolar observations was carried to a successful issue, and all parties, only excepting that under Lieutenant Greely in Lady Franklin Bay, at the northern end of Smith Sound, had returned to their homes in safety during 1884. The *Proteus*, which was dispatched to succour Lieutenant Greely, was crushed by the ice on July 23, 1883, the crew escaping with difficulty. Subsequently the Eskimos brought news of Lieutenant Greely's safe arrival at Littleton Island, where he found a sufficient supply of provisions. On the European side of the Arctic Ocean the fate of the Dutch steamer *Varna*, destined for Dickson Harbour, and of the Danish steamer *Dymphna* (Lieutenant Hovgaard), which was to follow up the successes of Baron Nordenskjöld on the coast of Siberia, caused

some anxiety, which was fortunately relieved by the arrival of the crew of the *Varna* at Vardö, and subsequently of the *Dymphna* likewise. Both vessels were beset by the ice in the Kara Sea in the autumn, and within sight of each other. All efforts to reach the land proved unavailing. In December the *Varna* was seriously injured by the ice, and was abandoned, its crew finding a hospitable reception on board the *Dymphna*. On July 24, 1884, the *Varna* sunk to the bottom. Lieutenant Hovgaard, not despairing of ultimate success, resolved to await the breaking up of the ice, over which his late guests made their escape to Waigat Island, where they were picked up by one of Mr. Sibiriakof's steamers and carried to Vardo. Six weeks later, on October 12, the *Dymphna* made her appearance there likewise, her screw-shaft having sustained such injury as to preclude all hopes of her being able to face the dangers of another Arctic winter with impunity.

In connection with Arctic exploration we may also refer to Baron Nordenskjöld's expedition to the interior of Greenland in July 1884, where, instead of the hoped-for verdant oases, he found naught but snow-fields, ice, and barren rocks. The Baron succeeded in penetrating 82 miles into the interior; and his Lapps on their snow-shoes got 144 miles farther.

Whilst the labours of the International Circum-Polar Expeditions were being prepared for publication during 1886, Arctic exploration had not been quite at a standstill, although no expedition went forth with the declared intention of reaching a high northern latitude. That some useful work may still be done, even within the Arctic regions in Europe, has been proved by M. Charles Kabot, whose explorations in Lapland very considerably enlarged our knowledge of that remote corner of our own continent. In Greenland some excellent work was done by Captain G. Holm, of the Danish Navy, who spent the winter of 1885 at a village near Cape Dan amid four hundred Eskimo, and succeeded in making a survey of the coast as high up as 66° north. The numerous fiords along the coast were carefully examined by him, without his having been able to discover traces of old Norman settlement. This negative result appears to demonstrate that the so-called colony of Osterbygd was really on the west coast of the island.

In Alaska, Lieutenant H. J. Allen has succeeded in ascending the Copper river, whence he crossed the mountain range to the Tananah, which he traced down to its junction with the Yukon.

In Siberia, Dr. Bunge and Baron von Toll went for a trip to New Siberia, a group of islands not

examined since Lieutenant Anjou's visits in 1821–3. In the meantime, Lieutenant Greely, whose opinion on such a point is of considerable weight, recommended an Arctic expedition, taking Franz Josef Land for its base.

It was hoped that the co-operation of so large a staff of scientific observers would force nature to reveal some of those laws which govern meteorological phenomena. No international scientific enterprise on so large a scale had up till then been undertaken.

CHAPTER IX.

DR. NANSEN'S PLANS.

In the autumn of 1891 Dr. Nansen made public the fact that he had excogitated a plan for reaching the North Pole, and proposed himself to carry it out. The world knew him by repute from his Greenland journey, but had, nevertheless, scant faith in the success of his proposed scheme. True, he was young and brave, but was it likely he could succeed where men equally courageous and much more experienced had over and over again lamentably failed, and had left their bones within the Polar Circle as memorials of their failure?

The views propounded by Nansen, as summarised in *The Forum*, were even then considered ingenious, and are now recognised as prophetically scientific. Nansen's theory was based chiefly on the assumption of the existence of a great polar current running southward along the east coast of Greenland. This current must be at least 250 miles broad, and run at least at the rate of two miles a day. Now, as this

water runs out of the polar basin, it must suck in water from the shores of Siberia and Behring Strait; that is to say, this east Greenland polar current drains the polar basin, carrying off the principal part of its current from Behring Strait, the Siberian rivers, the Nova Zembla current, and the rainfall of the region. The Nova Zembla current runs eastward and the Behring Strait current westward. The two currents unite in the neighbourhood of the New Siberian Islands, near the mouth of the river Lena, and then run the shortest way to the coast of Greenland. If so, this current will pass across or near the North Pole. This theory was supported, he thought, by the direct evidence of the drift of the *Jeannette*, which, after having been abandoned north of the Behring Strait, drifted north-west for nearly two years, and ultimately sank north of the New Siberian Islands, near the place where the Greenland current is supposed to originate. Not only so, but a number of objects believed to belong to the *Jeannette* were found three years after she sank on the south-west coast of Greenland. Further, a "Throwing-stick," of the fashion of Alaska, was found in Greenland, and must have drifted there in the same way as came the relics from the *Jeannette*. Another proof on which Dr. Nansen relied was the constant arrival of quantities

of Siberian and American wood on the coast of Greenland. Unquestionably the deductions appeared to have sufficient logical consistency, and convinced many, but not all. Dr. Nansen went on to state that he intended to have a wooden ship constructed, as strong as she could be made, of about 200 tons burden, with an engine strong enough to steam six knots an hour, and a hold capacious enough to carry food and coals for twelve men for five years. With this ship, which should be steel-sheathed, and so constructed as to be lifted out of the water when too severely squeezed by ice, the doctor proposed to proceed through Behring Strait to the New Siberian Islands, pushing then northward as far as practicable, in order to strike the current which carried the *Jeannette* to the north-west. By this course he hoped to drift across the site of the North Pole, and even if his ship chanced to become crumpled up, he opined that he and his mates could exist on the drift ice, and that in any case a current must bring them out somewhere.

It is obvious that a plan so novel and daring could not fail to meet the ordeal of severe hostile criticism. In *The Forum*, for example, General Greeley at once fell foul of it. The General's connection with the disastrous United States Polar expedition under Lieutenant Greeley, 1881–4, certainly gave him the

right to speak as an expert. As such, he boldly traversed most of Dr. Nansen's speculations.

Dr. Nansen's scheme, stated the General, seems to me to be based on fallacious ideas as to physical conditions within the Polar regions, and to foreshadow, if attempted, barren results, apart from suffering and death among its members. After quoting twelve of the best authorities on Arctic navigation, General Greeley stated that he had no hesitation in saying that no two of these believed in the possibility of Nansen's first proposition, to build a vessel capable of living or navigating in a heavy Arctic pack, such as the daring young explorer proposed to face. The second proposition the General regarded as even more hazardous, involving as it did a drift of more than 2,000 miles in a straight line through an unknown region.

Further, General Greeley scouted the idea that the *Jeannette* relics were genuine. Melville, he pointed out, who was the only surviving officer of that ill-fated ship, entirely denied their authenticity, and, even if they were authentic, the General held that there was no proof that they had drifted across the North Pole; they were much more likely to have come by Smith's Sound and Baffin's Bay. Nor was this all. The General thought that, so far from there being open water across the North Pole, that

there is a cap of land which is covered with flat-topped icebergs. Moreover, he did not think it possible that Nansen could get any vessel constructed strong enough to withstand the tremendous pressure of the giant Arctic icebergs, which are twenty-five feet thick, and crumple up with a force measurable only by millions of tons. Even if the ship were built solid she must succumb. As for the unfortunate explorer and his comrades, this was the General's pessimistic forecast of their probable condition:—

"Imagine, if one can, the horrors which a drift-journey in boats would entail, even in latitude 84 degrees, with five months of unbroken night and continuous cold of extreme severity. Even if the travellers were spared by the ice-pack, disability of a single man from frost-bite, scurvy, or other disease would, in a critical situation, necessitate, as in Dr. Leng's case, sacrifice of the main party, or the heartless abandonment of a comrade."

We have taken the preceding abstract of the papers in *The Forum* from a condensation of them which appeared in the *Review of Reviews* of 1891, to which the editor appends the rider, as pessimistic as General Greeley's own sinister vaticinations. "The moral of the paper" (*sc.*, the General's), "is that,

unless Dr. Nansen wishes to commit suicide, he had better remain at home."

There were plenty more of the genus "Croaker" who opined the same, and said so. But their dismal forebodings rebounded from the brave and ardent spirit of the courageous Scandinavian explorer like water from the back of the albatross or other skimmer of the seas. And besides his own carefully-formed opinions and plans, and his own bold and resolved spirit, Dr. Nansen had behind him the whole inspiring record of naval daring and naval success. The whole glorious bede-roll of the heroes of maritime discovery is resplendent with the names of men whose careers were a constant carrying out of the brave old English proverb, "Nothing venture, nothing have." With the fearful and fainthearted the foreboding prophet may prevail, but not with the stout and strenuous sons of the sea, particularly those of Scandinavian or Saxon stock. And so Dr. Nansen held to his purpose, let men say what they would.

As distinctly germane to our subject, we reproduce here an article which appeared at the time when Dr. Nansen's scheme was first mooted in that excellent German geographical periodical *Ueber Land und Meer*:—

"The remarkably brisk rivalry that has lately de-

veloped in the field of polar exploration gives ground for the hope that during the next few years many Arctic discoveries may be made which will be of great importance to science, so that in the near future the map of the North Polar regions will present quite a different picture from that with which we are familiar. The methods employed for conducting such expeditions, to say nothing of the latest scientific discoveries —such as electric light and the phonograph—that lend their aid, have opened a new era in polar exploration. The most notable ones, as far as the expeditions themselves are concerned, which will try to reach the North Pole from many different directions, are the following :—The Norwegian expedition of Dr. Fridtjof Nansen, who hopes to reach his goal from the island of New Siberia; the North American expedition of Lieutenant Peary, who will push to the north by way of Greenland; and the expedition of the Englishman, Fred. Jackson, who will take Franz Josef Land as the starting point. Besides these, an expedition, consisting of eight persons, will be sent out from America, for the purpose of exploring unknown Arctic regions. This party, which will be conducted by a German connected with the geological survey of the United States, Robert Stein by name, will go north along the western coast of Grinnell Land, because those who are supposed to know about such matters

claim that the best route to the extreme north is along a stretch of western coast which extends to the pole. In connection with polar explorers we may mention the Norwegian, Martin Eckroll, a wealthy merchant of Lofoton, who is greatly interested in Arctic expeditions, and has a theory that a so-called sledge boat, drawn by a number of dogs, could go over the ice from Spitzbergen to Franz Josef Land, and from there over the North Pole to the eastern coast of Greenland.

"The polar expeditions mentioned, with the exception of the first two, will start next year [1895]. The Peary expedition, consisting of ten persons, started last summer, in the sealing boat *Falcon*, for Whale Sound, in the northern part of the western coast of Greenland, where the expedition will winter. In the spring the expedition will start by the route followed by the former Peary expedition over the inland ice to Independence Bay.

"When this point is reached, they will divide into groups, one of which will be led northward by Lieutenant Peary, while another will explore the unknown coast from Independence Bay to Cape Bismarck, a stretch of about 300 English miles. At certain places on this coast-line land has already been seen from the ocean.

"But no expedition has caused so much discussion,

or met with so much opposition, as that of the Norwegian, Fridtjof Nansen, who started from Norway in his vessel, the *Fram*, and went along the northern coast of Siberia, following Nordenskjöld's route, and steering toward New Siberia Islands. He expected to turn north from this group of islands and push as far forward in the ice as possible, and then leave the rest to those currents in the existence of which he firmly believes, having based his entire plan on them. The point to which Nansen will push forward lies near the place where the *Jeannette* sank. Some articles left on the ice by the sailors were found, after many years, on the south-western coast of Greenland, a circumstance that plays an important part in Nansen's theory that there is an oceanic current leading over the North Pole. This theory, and his idea of allowing himself to be carried over the North Pole by the ice, have caused much head-shaking and sharp criticism in expert circles. The well-known American Arctic explorer, General A. W. Greeley, speaks of it with especial severity, saying that it is impracticable, unwise, and almost equivalent to committing suicide to try to carry out Nansen's plan of drifting with the ice-pack. A similar opinion has been expressed in English circles. But the existence of the currents counted on by Nansen has not been absolutely proved, and therefore it is useless to discuss the practicability

or impracticability of the plan. Nansen is a man to whom danger is of no importance as long as there is a chance of carrying out his project. He has doubtless understood the great risk that he runs, and it must be said in his favour that he has done all in his power to secure the safety of those who accompany him. Not the least important of the steps taken with this object in view is the peculiar construction of the vessel, especial attention being given to the fact that she would have a hard fight with polar ice, and an attempt being made to solve the problem of providing a vessel capable of resisting the crushing action of the masses of ice in the Polar Sea. The solution of this problem will be of the greatest importance to future expeditions, and on it, in connection with the special conditions, depends the success of Nansen's undertaking, which is of a purely scientific nature. However, the importance of the result cannot be calculated until after the material has been collected and worked up, and, therefore, the question must remain in the background for the present; but it must not be forgotten that the sciences in the service of which Nansen has gone touch closely on practical life. Of course, the expedition will make very important discoveries in relation to the ocean currents, and a knowledge of all the conditions of the currents of the seas toward which Nansen is turning

his helm is necessary for a better understanding of the laws connected with them.

"For the rest, the tasks before this expedition are the same as those planned by Nordenskjöld in 1877. Among these geology holds first place, for, from all appearances, the Nansen expedition will strike new lands which will probably yield rich fields for geological exploration. The different explorers have theories as to what is to be found at the North Pole, and they prophesy that Nansen's vessel will be held there for years.

"The expedition will also find a fine opportunity for meteorological investigation, the icy sea north of Siberia and the islands therein offering a rich field for that study. For the sake of the meteorology of Europe it is, as Nordenskjöld showed, of the greatest importance to have reliable information in regard to the divisions of land, and the conditions of ice, air-pressure and temperature in each of those parts of our earth about which so little is known. This is such an extensive field that the scientific men on the *Fram* can be occupied for years. As the vessel will pass through parts of the ocean that are rich in animal life, there will be an excellent opportunity for much interesting work in this branch of study, as well as for the study of botany on new lands that may be discovered. There is very little chance of

finding human beings in any of these undiscovered countries.

"At any rate, the expedition of Dr. Nansen, which is unusually well-equipped for scientific work, will have rare opportunities for making a success of the undertaking, even if Nansen should not be able to make exactly the voyage planned and laid out on the charts. Provided with provisions for five years, and a stronger vessel than has ever before started for the Arctic regions, this party of explorers can look forward confidently to accomplishing great things. The dangers of the Polar Sea have scarcely any terrors for Nansen and the men with him."

CHAPTER X.

"THE FIRST CROSSING OF GREENLAND."

SUCH is the title which Dr. Nansen gives this volume, published in 1892, in which he records his experience of his first exploration.*

This pleasantly-written volume, after some preliminary chapters, proceeds to inform us that the doctor started for Iceland by the Danish steamer *Thyra*, and after some trouble with the ice, they reached Reykjavik, the capital of Iceland. Subsequently Nansen proceeded farther north by the *Jason*, one of the sealers of the Norwegian Whaling Company.

On June the 5th they reached the floe-ice, and making their way through this Dr. Nansen recalls vividly his first making acquaintance with that region.

* "The First Crossing of Greenland." By Fridtjof Nansen. Translated by Hubert M. Gepp, B.A. (London: Longmans, Green & Co., 1892.)

"It was on a dark night in March, 1882," he remarks, "when we, on board a Norwegian sealer, met the first floes in the neighbourhood of the Jan Mayer, and ice was announced ahead. I ran on deck and gazed ahead, but all was black as pitch, and indistinguishable to me. Then suddenly something large and white loomed out of the darkness—a marvellous whiteness in contrast to the inky sea, on the dark waves of which it rocked and swayed. This was the first floe gliding by us. Some more came, gleaming far ahead, rustling by us with a strange, rippling sound, and disappearing again far behind. Then I saw a singular light in the northern sky, brightest down at the horizon, but stretching far up to the zenith. I had not noticed this before, and as I looked I heard a curious murmur to the north like that of breakers on a rocky coast, but more rustling and crisper in sound. The whole made a peculiar impression on me, and I felt instinctively that I stood on the threshold of a new world. What did all this mean? Were these the fields of ice in front of us and to the north? But what were the sound and light? The light was the reflection which the white masses of ice always throw up when the air is thick, as it was that night, and the sound came from the sea, breaking over the floe while they collected and grated one against the

other. On still nights this sound can be heard far out at sea.

"But as we drew nearer and nearer, the noise grew louder, the drifting floes more and more frequent, and now and again the vessel struck one or the other of them. With a loud report the floe reared on end, and was thrust aside by our strong bows. Sometimes the shock was so violent that the whole ship and we were thrown off our feet upon the deck. . . . Then one evening it blew up for a storm, and, as we were tired of the sea, we resolved to push into the ice and ride out its fury there. . . . The ship charged the ice, was thrown from floe to floe, but on she pushed, taking her own course in the darkness. The swell grew heavier and heavier, and made things worse than ever. The floes reared on end and fell upon each other, all around us was seething and noise. . . . We played a dangerous game by taking to the ice in a storm, but we had come out of it unscathed, and were now in smooth water. When I came on deck next morning the sun was shining, the ice lay white and still around us, and only the broken bulwarks grinning in the morning sun called to mind a stormy night.

"This was my first meeting with the ice," concludes the doctor. "Very different was it, indeed,

this second time. We saw it now on a fine bright day, a dazzling white expanse, quivering and glittering in the sunshine far away towards the horizon, while the sea rocked gently and peacefully against its edge."

And so through ice and snow, storm and calm, the *Jason* pursued the seals northward along the Greenland coasts until, on June 28, in latitude 66° N. and longitude 29° W., Nansen and his party, with their two boats, bade the *Jason* and her captain and crew farewell, and started fairly on their own perilous journey.

The party consisted of Dr. Nansen, Otto Sverdrup, a retired ship's captain, Olaf Dietrichsen, first lieutenant in the Norwegian infantry, and Kristian Kristiansen Trana, a peasant, these being all Norwegians. Besides these there were two Lapps, Balto and Ravna.

And so bidding farewell to the sealer the party started to push their boats through the ice, or drag them over this and the snow as the case might be.

At length they reached *terra firma* near Cape Tordenskjöld on the Greenland coast, and here they celebrated the of late novel sensation of having firm ground under their feet by preparing chocolate and a real Sunday dinner.

They had not proceeded far along Greenland before they fell in with a party of Eskimos, not a little to Nansen's surprise, for he had been told there was little likelihood of encountering any there. They were equally surprised at meeting the Norwegians, and could not apparently make up their minds whether the latter were human or supernatural beings. The doctor had carefully acquired some presumed Eskimo words and now tried to enter into conversation with them, but only to find all his efforts ineffectual. The natives could not understand Nansen's Eskimo—or what he meant to be Eskimo—and the doctor could not comprehend theirs, so both parties fell back on the language of signs.

Balto, the Lapp, who on his return to Norway wrote a short account of the expedition, says of this *rencontre* :—

"While we were sitting and eating we heard a sound like a human voice, but we thought it was only a raven's cry. Presently we heard the same sound again, and now some of us thought it was a loon screaming. Then I took the glasses, and went up on to a point of rock, and looking about saw something black moving across an ice-floe. So I shouted 'I can see two men over there on the ice!' and Nansen came running up at once and looked

through the glasses too. We now heard them singing their heathen psalms and called to them. They heard us at once, and began to row towards us. It was not long before they reached us, and as they came closer one of them gave us a profound bow. Then they put into shore, and getting out, dragged their canoe upon land. As they came nearer us they lowed like cows, which meant that they wondered what sort of folks we were. Then we tried to talk to them, but we could not understand a word of their language. So Nansen pulled out his conversation-book and tried to talk to them that way, but it was of no use, because we could not make out how the letters were pronounced in their language. Then Nansen went down to the boats and fetched some biscuits, which he gave them, and afterwards they rowed away again to the northward."

For several months the bold explorer and his comrades pushed on through well-nigh insurmountable obstacles, until at length they reached an Eskimo settlement of seal-hunters under Danish protection, saw white faces and heard Norse and English again spoken.

Dr. Nansen tells an amusing anecdote of one of the two Lapps who accompanied him on his tour through Greenland. He mentions at the end of his book that on his return to Christiania, when the

quays and ramparts were thronged with people eager to welcome him, he said to one of the Lapps,—

"Isn't it a fine sight?"

"Yes, very fine," returned the matter-of-fact Lapp; "but, oh, if they were reindeer!"

CHAPTER XI.

SKI AND SKILÖBNING.

We have remarked in a preceding chapter that when Dr. Nansen learned that Nordenskjöld's Lapps had done such good travelling on their *ski*, or Norwegian snowshoes, he felt that he held the clue to solving the difficulty of his own projected Greenland expedition. We will give his ideas about this in his own words.

"The idea flashed upon me at once of an expedition crossing Greenland on '*ski*' from coast to coast. There was the plan in the same form in which it was afterwards laid before the public, and eventually carried out.

"My notion, put briefly, was, that if a party of good *skilöbers* were equipped in a sensible and practical way they must get across Greenland if they began from the right side, this latter point being of extreme importance; for if they were to start, as all other expeditions have done, from the east side, they were practically certain never to get across. They would have all the flesh-pots of Egypt behind them, and

in front the unexplored desert and the East coast, which is little better, and, furthermore, if they did get across they would have the same journey back again in order to reach home. So that it struck me that the only sure road to success was to force a passage through the floe-belt, land on the desolate and ice-bound East coast, and thence cross over to the inhabited West coast. In this way one would burn one's ships behind one, there would be no need to urge one's men on, as the East coast would attract no one back, while in front would lie the West coast, with all the allurements and amenities of civilization. There was no choice of route, 'Forward,' being the only word. The order would be — 'Death or the West coast of Greenland!'"

Farther on in his description of his first expedition, Dr. Nansen observes :—

"The expedition I am about to describe owed its origin entirely to the Norwegian sport of *skilöbning*. I myself have been accustomed to the use of *ski* since I was four years old, and every one of my companions was an experienced *skilöber*, and all our prospects of success were based upon the superiority of *ski* in comparison to all other means of locomotion, where large tracts of snow have to be traversed."

In a note in the same volume the doctor explains the word *ski* and its derivation thus :—

"*Ski* (plural *ski* or *skier*), literally a 'billet' or thin slip of wood, and connected etymologically with the English 'skid' and 'skied,' is the Norwegian name for the form of snowshoe in general use amongst the Northern nations of the Old World. The pronunciation of the word in Norway may be considered as practically identical with the English 'she.' The compounds of the word . . . . are *skilöber*, a snowshoer, and *skilöbning*, snowshoeing, both formed from the verb *löbe*, to run. The only reason why the established English term 'snowshoe' should not have been employed is that this course would have led to inevitable confusion with the very dissimilar Indian snowshoe, of which also frequent mention is made."

So far Dr. Nansen. Now let us try to get a correct idea of these useful *ski*.

The *ski*, then, are long narrow strips of wood, split with the grain. For a man of ordinary stature, they are from eight to nine feet long, about four and a half inches wide, one inch thick in the centre under the foot, and tapering off to about a quarter of an inch at each end. As a rule, a pair of *ski* are about of the same length; but in some of the Norwegian valleys and in Finland one is much longer than the other. In front they are curved upwards and pointed, and they are sometimes a little turned up at the back end too. The sides are more or less parallel,

though the best forms have the greatest width in front, just where the upward curve begins, but otherwise they are quite straight and flat, and the under surface is made as smooth as possible. The plank-like piece of wood which constitutes the *ski* is split with the grain, to stand the great strain often imposed upon it, and never sawn at all.

The attachment to the foot consists of a leather or skin strap which passes over the toes, and a band which passes from this around the heel of the shoe. The principle of fastening is to make the *ski* and foot as rigid as possible for steering purposes, while the heel is allowed to rise freely from the *ski* at all times.

For his Greenland expedition, Dr. Nansen did not use *ski* of any fixed Norwegian patterns, but had nine pairs (two of oak and the rest of birch) made specially according to his own instructions.

The foregoing description, it may be added, is mainly from Dr. Nansen's book.

CHAPTER XII.

NANSEN'S SHIP THE "FRAM."

We now come to Dr. Nansen's preparations for his last expedition. The reader will remember that we recorded in a previous chapter General Greeley's opinion that no vessel could be constructed sufficiently strong to withstand the constant intense pressure of the floe-ice, for so long a period as Dr. Nansen's voyage would involve; and the General even went so far as to express his opinion that an absolutely solid hull could not resist it.

The facts that Captain Sverdrup brought the *Fram* safe back to her harbour, and that Dr. Nansen hopes to go to sea in her again, of course throws into strong relief the futility of the confident pessimistic vaticinations of the American General.

Of course, in contemplating his hazardous Polar expedition, Nansen did not fail to take into account the enormous compressive force of the floe-ice, and gave directions for the building of a vessel adapted to contend with this adverse force. So the *Fram*

THE FRAM ON HER WAY NORTHWARDS OF BRONO SUND, NORWAY.

had to be designed of so stout a build as to be able to withstand the pressure of the ice and the wear and tear of at least three years of Arctic cruising.

Provision was made for these exigencies by constructing her hull of a strength never known before. We take the following facts concerning the *Fram* mainly from Mrs. Tweedie, who, in her pleasant, breezy, gossiping book of Norwegian travel, carefully describes the vessel, and gives an illustration of her in dock.*

The vessel was built at the mouth of the Christiania Fjord, by a relation of William Archer, the well-known translator of Ibsen. She was launched in October, 1892, and named by Mrs. Nansen the *Fram*, or "Forward," a most appropriate designation, for Nansen is fond of saying "Forward is my motto."

The *Fram* is but a small craft, 128 feet long, but so broad of beam that her breadth is fully one-third of her length. She is only of about 800 tons displacement, including her cargo. She is not built for speed, which is not a primary requisite, as is strength. The *Fram's* sides slope gradually from bulwarks to keel. This section was adopted in the

* "A Winter Jaunt in Norway," &c., by Mrs. E. B. Tweedie, London, 1894.

belief that, with such a form, the pressure of the ice would tend to force the vessel upwards and out rather than crush her. So rounded indeed is her bottom that the keel is embedded in the hull, so as to offer no projection which the ice could demolish. The rudder and screw, by means of an ingenious mechanism, can be raised and deposited in a kind of well where they would be in safety.

The sides of the vessel were formed 30 inches thick in one solid combined mass of pitch-pine, oak and greenheart timber, joined homogeneously together by pitch. Beside this substantialness of hull the vessel's sides were re-inforced by braces, struts, and stanchions, carefully adjusted at points where there might come hazardous pressure, and at such angles that the one helps to support the other. All this combination has been carefully planned to impart the greatest possible strength and stability.

Her engine consumes under three tons of coal in twenty-four hours, and she was expected to average under steam not more than about three knots an hour. The coal would only occasionally be brought into requisition. The *Fram* has three masts, and is schooner-rigged, and her designer expected that, under favourable circumstances, she would reach a speed of eight or nine knots an hour.

The *Fram* was provided with two decks. In the

middle of the ship a fair-sized saloon was constructed, surrounded by cabins for the officers and crew. "Dr. Nansen foresaw that it was quite possible that during intense cold the cabins might become untenantable, from the warm moisture exhaled freezing on the walls in solid ice, and the very mattrasses becoming lumps of ice. Under such circumstances he proposed to take a hint from the Eskimos, and so he and his men will, if necessary, all live together in the saloon, and generate heat among themselves. The saloon walls are protected by cork and felt, and reindeer skins, and the floor is carpeted with bearskin rugs," wrote Mrs. Tweedie, after inspecting the *Fram* in dock in 1893.

"The cooking will chiefly be accomplished by means of alcohol, and for heating petroleum will be used, as it gives light as well.

"The *Fram* only carries about 300 tons of coal, which will have to be saved as much as possible for the engines in case of need. The interior of the vessel is like a puzzle, each hole having its allotted burden. Everything has been made to fit into everything else, so that no space, however small, is wasted.

"Although only a small craft she cost nearly £10,000, and this, of course, was only about half the expense of the expedition. The Norwegian

National Assembly granted most of the money. King Oscar himself takes the liveliest interest in the plans, all of which Nansen submitted for his inspection. The Christiania University and some dozen private individuals contributed, and the Storthing voted the final sum required in June, 1893. Nansen would not start until everything was paid, and weighed anchor three days later."

DECK OF THE FRAM AT CHRISTIANA BEFORE STARTING.

CHAPTER XIII.

THE VOYAGE OF THE "FRAM."

NANSEN'S little bark, then, having been carefully constructed, strengthened, and equipped according to the doctor's own precise and minute instructions, as detailed in the previous chapter, and every advantage having been taken of the experience of earlier Arctic explorers, there can be no doubt that, small as she is, the *Fram* is the best adapted vessel for her mission that ever navigated the Polar Seas.

Nor did the doctor exercise less care in the selection of the comrades who should share his perils. We say "comrades" advisedly, for at the banquet given by the Savage Club (London) in the explorer's honour, on Saturday, Feb. 6, 1897, the Chairman (J. Scott-Keltie, Esq.) remarked :—

"In that connection he would like to say that he noticed that the brave fellows on the *Fram* were

sometimes alluded to as the 'crew.' Dr. Nansen did not care to see that term applied to them. They were all 'comrades,' living in a kind of republic, with Nansen as their guide, philosopher, and head. Some of these comrades were asked when they got back to Christiania which officer they liked best. 'Oh,' they said, 'Captain Sverdrup.' 'What about Nansen?' 'Oh, Nansen,' was the reply; 'we don't look on him as an officer at all. He is a demi-god!'"

At which sally we need not be surprised that the "Savages" cheered and laughed heartily.

Well, we may be quite sure that Dr. Nansen chose his "comrades" for the *Fram* voyage with the same care which he exercised over the appointments of the vessel herself. They were thirteen, all told. There is a vulgar English superstition that thirteen is an unlucky number; but that was certainly not the case in connection with the *Fram*. Amongst the little band was Captain Sverdrup, of whose reliability Dr. Nansen had already had experience. Another was Lieutenant Johannsen, who was subsequently Dr. Nansen's faithful companion during the trying fifteen months' journey after they had quitted the *Fram*. A third was Lieutenant Scott-Hansen, the

Scoto-Scandinavian (for he was born at Leith, N.B.), whose excellent scientific observations lend such value to the records of the expedition.

"Before leaving Norway in 1893," observes Mr. J. Arthur Bain, in an article entitled "A Talk with Dr. Nansen," in the *Strand Magazine* of last December, "Dr. Nansen made three predictions regarding his venture. The first was that 1896 would probably be the first year in which it would be heard of. The second was that if the *Fram* were discarded, the party would come home by Franz Josef Land and Nova Zembla. The third was that if they stuck to the ship she would, by the aid of the drift, bring them out between Spitzbergen and East Greenland. This is precisely what happened. Dr. Nansen has vindicated his theory of the Polar drift, and has discomfited those who maintained that in trusting to what they styled 'supposed currents,' he was throwing away the lives of himself and his party."

If the reader recalls the sinister vaticination of General Greeley and others, quoted by us in an earlier chapter of the present volume, he will realise how absolutely correct this statement is.

The *Fram* had not long left Christiania when she

encountered the Wilson liner *Rollo*, outward bound to the North Cape, in 64° 48′ N. lat., 13° 20′ E. long. The crew of the *Rollo* saluted the gallant explorers with a chorus of hearty cheers and a flight of rockets, and the "hurrahs" were as heartily returned by them.

The *Fram* stood out to sea from Vardö, July 21, 1893, and made a good passage past Nova Zembla, and met the first ice in 69° 50′ N. lat., 50° E. long., about 10 miles north of Kolgueff Island. The *Fram* faced it in capital style, and reached Jugor Strait on July 29.

From Jugor Strait the *Fram* made her way through the Kara Sea to the mouth of the Olenck River, which she reached on Sept. 15. Here it had been arranged that she should embark a number of sledge dogs, and hither twenty-six of those indispensable animals had been brought by Baron Toll, and awaited Nansen. The doctor, however, owing to the lateness of the season, thought it best to at once make for the North in order to avail himself of the return current across the Pole to Greenland, on which he had announced his confident reliance. In the Kara Sea Nansen discovered a hitherto unknown island. From hence they skirted

CAPTAIN SVERDUP ON THE BRIDGE OF THE FRAM.

the western side of the New Siberian Islands, but without touching land.

A little later (on Sept. 22) the *Fram* became frozen in by the ice in 70° 50′ N. lat., 133° 37′ E. long., and thenceforward during the ensuing autumn and winter she drifted with the ice north and north-west without sighting land.

It was while the ship was thus being carried along in her icy fetters that Dr. Nansen made the remarkable discovery, which is alone sufficient to render the voyage memorable, and to give his name a distinguished place in the annals of geographical science.

The doctor, then, has found that there exists a wide and deep sea polewards, and that this ocean has a relatively high temperature below the surface. Previous theorisers, and even explorers, had imagined that the Arctic Sea was of no great depth, and was intensely cold from its surface to its deepest portion. This sea, as surveyed and tested by Nansen, is a continuation of the Arctic Sea, situated between Greenland on the one hand, and Norway and Spitzbergen on the other.

Meanwhile let us give a word to the fortunes of the *Fram*, left behind imprisoned in the ice, in the able charge of Captain Sverdrup.

There was, of course, nothing for it but to patiently let the vessel drift with the ice in which she was congealed, with the current. This carried her safely far to the North, to 85° 57′ N. lat., past Franz Josef Land and Spitzbergen, into open water at 83° 14′ N. lat., 14° E. long., until finally the *Fram* safely reached Hammerfest on Aug. 21, 1894.

Dr. Nansen and Lieutenant Johannsen struggled gamely on over ice and snow until, in 86° 14′ N. lat., 95° E. long., they not only found that the accumulation of hummocks of ice rendered farther northward progression impracticable, but they also realised the presence of that adverse phenomenon of the southward drift of the ice-pack, which had been noted by Parry seventy-five years earlier. The whole pack indeed was, they discovered, slowly but steadily floating to the southward at a rate which so neutralised their most strenuous efforts that their daily progress northward did not exceed four or five miles.

There was nothing for it but to turn their faces southward, and they decided to make for Spitzbergen by way of Franz Josef Land. They hoped perhaps to encounter a vessel there which *would* convey them home. At least they might

meet game, or Eskimos who could supply them with food.

Their homeward journey was difficult and perilous. They had left the *Fram* hopefully, and even with an abundant stock of *gaîté de cœur*, but only provisions for a hundred days, and an insufficient stock of winter clothing. As day after day passed by the small supply of food gradually but surely lessened, and the remaining dogs were starving. There was no prospect of better travelling, and so Nansen decided to turn towards Franz Josef Land. Their chief difficulty now lay in the great cracks in the ice—so extensive many of them that the explorers had to walk miles out of their way to skirt them. Their dogs had gradually diminished till they had but two. On July 24 they had their first glimpse of land. It appeared to be quite near, but it took them fourteen days of hard struggling to reach it. They had to travel a considerable distance by water, and they were compelled to slaughter their two faithful dogs. This they did with deepest regret, so much so, indeed, that neither man could slay his own special animal. Therefore Nansen shot Johannsen's dog, and the latter did the same painful but necessary duty in regard to Nansen's animal.

The explorers reached Franz Josef Land Aug. 26, and wintered in 81° 13′ N. lat., in a little stone hut which they constructed, and in which Nansen says they slept twenty hours out of the twenty-four. Here in these Polar regions they passed the Christmas of 1895. Nansen made the following entry in his diary on that day:—

"This is Christmas Eve, cold and blowy out of doors, and cold and draughty indoors. How desolate it is here! We have never had such a Christmas Eve before. The bells are now ringing in the Christmas Festival at home; I can hear the sound of them swinging through the air from the church towers. How beautiful it sounds! Now the candles are being lighted on the Christmas trees. Flocks of children are laughing, dancing round in joy. . . . This is the time of joy, and there is rejoicing in every heart at home. We, too, are keeping the Festival in our little way. . . . For supper we have food made of powdered fish and wheaten meal, with train-oil for sauce; to-morrow morning we are going to have chocolate and bread."

Space precludes our giving further details, even if it were fair to do so, seeing that Messrs. Archibald *Constable* and Company have just published Dr.

DR. NANSEN IN WINTER-DRESS OF WOLF-SKIN.

Nansen's "Farthest North," containing the whole narrative and numerous photographic illustrations by the author, who took no less than one thousand photos during his Polar sojourn.

This Christmas was spent in 81 °13′ N. lat. In the Spring the twain started with the idea of traversing the ice to Spitzbergen; but when passing Elmwood, Mr. Jackson's winter quarters, they were discovered by that gentleman and brought home in the *Windward*.

CHAPTER XIV.

NANSEN IN ENGLAND.

THE visit of Dr. Nansen to this country on a lecturing tour had been looked forward to with a great amount of interest. The explorer and his wife, accompanied by Lieutenant and Mrs. Scott-Hansen, reached London just before eight o'clock on the morning of Wednesday, Feb. 3, of the current year (1897). Mr. Scott-Keltie, who has acted as Dr. Nansen's representative in England, Mr. Aubyn Trevor-Battye, and several other friends met the party at Queenborough. Dr. Nansen had previously visited England some little time before he set out on his hazardous venture to the Arctic regions. On that visit he struck all who met him as a veritable picture of health and vigour. On his present home-coming, notwithstanding experiences in the interval which might well have tried any other man, he equally looked the picture of splendid *health.*

Among those waiting at Victoria Station to offer him welcome were Sir George Baden-Powell, M.P., and the Secretary of the Norwegian Legation. There were also a number of spectators, and as the explorer appeared one of these cried "Bravo, Nansen!" With the courteous and kindly air which is characteristic of him, the doctor lifted his hat in salutation of the hearty burst of cheers which the shout had started. Then, after a little, Dr. and Mrs. Nansen drove away with Sir George Baden-Powell—whose guests they were for the time being—to his residence in Eaton Square. In the evening Sir George gave a dinner-party in honour of the explorer, and Lieutenant Scott-Hansen and his wife were able to remain in England only a few days, as Lieutenant Scott-Hansen, who has received a good appointment in the Norwegian navy, had to return to his duties.

We reproduce here the description of the interview with the doctor of a representative of the *Daily Chronicle*, from the issue of that journal dated Feb. 4:—

"Nansen looked thinner than when I last saw him some months ago at Lysaker, but certainly well and free from care. He had worked continuously at his

book from the beginning of October until a week or two ago, and he told how it was the most trying work he ever had, not even excepting the fifteen months' terrible trudge over the ice after he left the *Fram*. He lamented that he had had to leave unanswered so many letters from valued friends; but it was a question of book or no book, and there was only one course open to him.

"I had a good talk with Nansen, and he had much to talk about. He was interested in his lectures. The lecturing he rather likes, but the inevitable 'receptions' which follow so many of the lectures he regarded as a great trial. Still, he has made up his mind to face the ordeal here, and the still more trying ordeal in America, just as he did the ordeal of the Arctic drift, and the ice journey polewards and south again. He showed me the slides he intended to exhibit, and a unique series they were. He has a selection of about 300 to choose from. One of his *kayaks* and a sledge have been sent over to be exhibited at the Geographical Society's meeting. Several other articles belonging to the expedition have been sent over, which we understand are to be exhibited. This kind of thing he does not like. As to the statements that the *Fram* itself was to be sent

over to be made a show of, he declared, with some warmth, that, so far as he is concerned, nothing of the kind should be done. He would regard it as a most undignified proceeding.

"As to reaching the North Pole, he assured me that that was an easy matter to anyone with the necessary endurance, confidence in himself, and knowledge of the conditions.

"I asked him if he did not regret remaining on the *Fram* till she reached her highest latitude, close on 86° N., and then to have started on his journey to the north.

"'No,' he said, for that was in November, and it would have been impossible to start till March, by which time the *Fram* had drifted considerably to the south-west, and that would have been a much less favourable starting-point than the one he took, as the drift of the ice would have been against him, and he might have had the bad luck of Parry eighty years ago. Evidently he had nothing to regret in the conduct of his expedition. Everything turned out as he predicted; and he could hardly have wished anything done otherwise than it was.

"In tone and bearing Nansen's success has made no change upon him. He has abandoned the strict

rigour of the Jaeger costume which was so characteristic during his visit to London some four years ago. A short double-breasted coat of pea-jacket cut, fitting tightly to his athletic and well-built frame, takes the place of the old cross-cut jacket. Cold as it was, his only wrap was what looked like a light thin summer cape. Fashion he still disregards, except when he dresses for the evening. He has more than one 'order,' and in deference to English custom on ceremonious occasions he will wear the star of his highest order at the Albert Hall. I believe he will deliver his address on Wednesday night without having it written out before him. He has a penetrating voice, and I have no doubt he will be well heard all over the Albert Hall.

"I had some talk with Lieutenant Scott-Hansen, a trim and courteous young naval officer, as to the scientific work of the expedition. His special department was meteorology and magnetism. The observations in both departments were abundant and regular, and it will take some time to work them out and co-ordinate them. In these departments he does not expect any very startling results; but the observations may throw much light on several obscure problems in these branches of science.

"It may be remembered that on Dr. Nansen's arrival in Norway a Nansen fund was started for the prosecution of research in various departments of science. The fund has now reached the handsome sum of 300,000 kroner, and he assured me that it will probably soon amount to 500,000 kroner (about £28,000). From this fund Nansen will receive nothing, though he will be entrusted with its direction in the promotion of scientific research. He was somewhat averse to accepting the professorship at Christiania University which it was proposed to found for him; but the University authorities were so anxious to have his name connected with the University, that when he was assured that he would not be required to undertake any teaching duties, he agreed to accept the appointment.

"It was expected that his little daughter Liv might accompany her parents to England, but no doubt wisely they have left her at home, and shut up their charming little house at Lysaker. As one happy result of the expedition Dr. Nansen is in a position to purchase a portion of the ancestral estate adjoining his home, and on this a much larger house is to be built, though nothing can ever exceed the charm of the open-roofed study in the present home looking

over the beautiful fjord to the pine woods beyond. What exactly his future work may be he has not decided, though he evidently hesitates to undertake any enterprise that would separate him again for so long from his wife, who manifested such heroic patience and confidence in her husband's success.

"As to Dr. Nansen's twelve comrades, he felt sure they would be provided for by the Storthing, if not by the Norwegian Government. Captain Sverdrup has been engaged to run the vessel from Norway to Spitzbergen during the summer. But it is not improbable that in a year or two Sverdrup may be sent out by Nansen to make some further researches in the seas around Spitzbergen. It is not improbable, moreover, that Nansen himself may carry out an investigation of the seas between Spitzbergen and Greenland, mainly with the view of testing, with improved modern instruments, the temperatures which have been found in that part of the ocean, in order to compare them with those found during the drift of the *Fram*. He has no intention of making another attempt on the Pole. He has, during the *Fram* expedition, collected all he considers is required to work out the main scientific conditions of the North Polar area. It would be interesting to carry

out an exploration of the region to the north of America; but that he is likely to leave to others. After he has finished his lecture tours in England and America he will probably devote himself to the completion of the scientific results, in which he will be assisted by a number of specialists.

"Nansen has no intention of lecturing in Australia, which he has been urged to do. As to the Antarctic, he is doubtful. Naturally, he hesitates to sever himself again from his wife and child for any lengthened period, though, like others, he feels that the parting would not be so trying as was the case with the recent expedition.

"I asked him whether the *Fram* was as well suited for the Arctic as the Antarctic; as naval men say that, however well adapted she is for ice-work, it would not be possible to do any effective work with her in the open sea. Dr. Nansen assures me that that was nonsense. If only her decks were modified somewhat, she could face any kind of sea."

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